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RCRA FACILITY ASSESSMENT
OF THE
E.I. DUPONT DENEMOURS AND COMPANY, INC.
CHESTNUT RUN PLAZA
WILMINGTON, DELAWARE

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RCRA FACILITY ASSESSMENT REPORT
E.I. DUPONT DENEMOURS AND COMPANY, INC.
CHESTNUT RUN PLAZA

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I. INTRODUCTION

Development of a RCRA Facility Assessment (RFA) represents the first phase of the corrective action program as established by the EPA in the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA. The purpose of the RFA is to identify and gather information on releases at RCRA facilities; identify, evaluate and describe Solid Waste Management Units and other areas of concern; evaluate potential for releases to the environment; and determine the need for further investigation, remedial actions and/or interim measures. The RFA involves a comprehensive Preliminary Review (PR) of all available documents pertaining to the facility, a Visual Site Inspection (VSI) of the facility, and, if appropriate, a Sampling Visit.

The Preliminary Review was performed during February/March 1991. The PR included review of numerous State files, including RCRA, CERCLA, Air, Solid Waste, SERT, Soil and Water, Wetlands, Water Resources, Fish and Wildlife, and Public Health. Federal sources of information included EPA Region III in Philadelphia, the United States Geological Survey, and the New Castle County Office of the Soil Conservation Service. Specific references to the above informational sources are provided in Section VII of this RFA.

The VSI of duPont Chestnut Run was conducted on July 17, 1991. The purpose of the VSI was to confirm information provided by the facility pertaining to SWMU's; identify additional SWMU's and Areas of Concern (AOC); obtain complete identification of waste; photograph SWMU's and AOC's; and monitor for vapor emission. The trip report for the VSI is summarized in Appendix A.

A sampling visit was not performed as part of the RFA. However, sampling at several SWMU's is recommended.

The seven Sections of this report provide information gathered from the PR and the VSI. Section II discusses the location of the facility within the context of potential environmental impact on the surrounding area. Section III describes facility operations and processes, and waste associated with these activities. Section IV and V provide descriptions of the SWMU's and AOC's respectively. Conclusions and recommendations concerning the need for further actions at the facility are presented in Section VI. Section VII provides the references used for obtaining information for this report. A photograph log showing SWMU's and AOC's is included in Appendix A.

II. ENVIRONMENTAL SETTING

Location and Land Use

The E.I. duPont Chestnut Run facility is located approximately 4000 feet west of the incorporated limits of the City of Wilmington, New Castle County, Delaware. (See figures 1, 2, and 3) The property is situated at the northeast corner of Center Road (State Road No. 141) and Faulkland Road (State Road No. 34).^{1,2} The main entrance gate to the facility is off Faulkland Road. Locational coordinates for the facility are 39°44'54"N latitude and 75°36'07"W longitude.³

The property is bound to the north by Lancaster Court Apartments, to the south by Faulkland Road, to the east by the Reading Railroad and to the west by Center Road.⁴

Land use in the vicinity of the facility is primarily residential. North of the facility, Lancaster Court Apartments and Silver Spring residential areas are located. South of the facility Oak Hill and Willow Run residential areas are located. Also located south of the facility is Willow Run Park and the Austin D. Baltz elementary school. To the west, the Ferris juvenile detention school is located. Situated to the east is the Silver Brook-Colonial Heights cemetery.⁴

The area of the facility is not located in the Coastal Zone and is of "minimal flood hazard". The grade elevation at the facility is 104 feet min., before any construction elevation. Chestnut Run, which drains the area, including the facility, is at a normal elevation of 93 feet min.³

Water Use

The area surrounding the duPont facility is supplied drinking water by the City of Wilmington. Brandywine Creek is a major source of public drinking water supply for Wilmington. The City of Wilmington draws an approximate average of 27 million gallons per day from the Brandywine. Wills Pumping Station located along the Brandywine Creek, is approximately two point five (2.5) miles northeast of the facility. Due to the distance and topography, no impacts to the Brandywine Creek from the duPont Chestnut Run facility are anticipated.

Two reservoirs used as municipal sources of water receive water from the Wills Pumping Station. Water to be treated is pumped to the Hoopes Reservoir two point five (2.5) miles northwest of duPont Chestnut Run. Storage water is placed in the Porter Reservoir four (4) miles northeast of duPont Chestnut Run.^{2,3,5}

Three streams meander through the duPont Chestnut Run facility property. At the western portion of the property, Willow Run stream originates. To the east, both Chestnut Run's East Branch and Chestnut Run's West Branch are located.^{1,2}

Willow Run originates from an underground stream. E.I. duPont channelized it with an underground culvert system. The discharge location is along the southwestern portion of the property.⁶

This discharge is known as duPont Chestnut Run's NPDES Permit Number DE0000566-outfall 002 and consists of single pass non-contact cooling water, condensate, non-contaminated storm water and surfacing underground spring water.⁷

The Chestnut Run West Branch enters the northeastern area of the facility property and meanders in a southerly direction.^{1,2} It discharges into a small impoundment once used as a settling pond. It then discharges into a second, larger impoundment utilized as a second source fire control pond, storm water collection system, and for its aesthetic value. E.I. duPont Chestnut Run's NPDES outfall 003 also discharges to this pond. It consists of single pass non-contact cooling water, condensate, and non-contaminated storm water from Labs and Service Buildings.⁷ Once the West Branch exits the larger pond, it flows underground and converges with another underground piping system. It then discharges to the Chestnut Run East Branch.⁶ This is duPont Chestnut Run's NPDES outfall number 001. It consists of non-contact cooling water, condensate, non-contaminated storm water, and the West Branch of the Chestnut Run.⁷

Both Willow Run and Chestnut Run, after leaving the facility boundary, meander southeast and converge into Little Mill Creek approximately one (1) mile south of the discharge sites.²

Little Mill Creek meanders east-southeast for approximately one point five (1.5) miles and empties into the Christina River. At this discharge point, the Christina River is tidal and brackish.^{4,6}

At Smalleys Pond, approximately eight (8) Christina River miles upstream from the discharge of Mill Creek, is Wilmington Suburban's Christina Water Plant. This portion of the Christina River is non-tidal and fresh. Due to the easterly flow of the Christina River, the Christina Water Plant intake would not be impacted by the duPont Chestnut Run facility.^{2,8} Designated uses of the Christina River include:

- | | |
|---------------------------------|------------------------------------|
| 1. Public supply * | 5. Fish, aquatic life and wildlife |
| 2. Industrial supply | 6. Cold water fishery * |
| 3. Primary contact recreation | 7. Agricultural supply |
| 4. Secondary contact recreation | |

* designated use only applies to the upper fresh water reaches of the Christina River.⁸

Some designated uses are not fully supported. Primary contact recreation may be affected by elevated enterococcus levels. Fish and aquatic life propagation may be affected by zinc and other toxics in the lower portions of the basin. All available information indicates that the public water supply use, for the upper fresh water reaches, is being met completely. The Federal Clean Water Act "fishable-swimmable" use is rated "generally attained" for swimmable and "partially attained" for fishable.

Likely causes of impacts to the Christina River Basin are reported to be point source discharges, non-point source run-off, and combined sewer overflows.⁸

Ground water usage in the vicinity of duPont Chestnut Run is negligible, if not nonexistent.⁹ Very old crystalline rocks characterize this area. The rocks in the vicinity of duPont Chestnut Run are generally impermeable and as a result do not yield large quantities of water.¹⁰ Due to this, well development in this area is impractical for public and industrial supply.

Surface water run-off from the duPont Chestnut Run facility should normally drain to the on-site storm water collection systems.⁶ These systems discharge to either Willow Run via outfall number 002 or Chestnut Run via outfall number 001 or 003 of duPont Chestnut Run's NPDES permit number DE0000566.⁷

Soils

The E.I. duPont Chestnut Run facility property is made up of seven different soil series and fourteen different phases within those series. To better understand each soil's location and extent, refer to figure 4.

Two phases of the Chester series are present at the facility: Chester loam, 0 to 3 percent slopes (ChA), and Chester loam, 3 to 8 percent slopes (ChB2). The Chester series consist of deep, nearly level to fairly steep well drained soils with moderate permeability. They are mature soils that developed in materials weathered in place from crystalline rock.

Typical Chester series profiles consist of:

- 0 to 8 inches - Loam
- 18 to 28 inches - Clay loam
- 28 to 60 inches - Loam, silt loam, fine sandy loam

Some properties of the Chester series are listed below:

- Permeability: 0.63 - 2.0 inches per hour
- Reaction (pH): 4.5 - 6.0
- Corrosivity (concrete): Moderate
- Corrosivity (uncoated steel): Low to moderate

Three phases of the Glenelg series are present at the facility: Glenelg and manor loams, 3 to 8 percent slopes, moderately eroded (GmB2), Glenelg and manor loams, 8 to 15 percent slopes, moderately eroded (GmC2), and Glenelg and manor loams, 8 to 15 percent slopes, severely eroded (GmC3). The Glenelg series consist of deep, well drained, gently sloping to steep soils that occur on uplands of the Piedmont Plateau.

A typical profile of the Glenelg series includes:

- 0 to 10 inches - Loam
- 10 to 26 inches - Silt loam, silty clay loam
- 26 to 42 inches - Loam, fine sand loam

Some properties of the Glenelg series are listed below:

- Permeability: 0.63 to 2.0 inches per hour
- Reaction (pH): 4.5 to 5.5
- Corrosivity (Concrete): Moderate
- Corrosivity (Uncoated steel): Low to moderate

One phase of the Glenville series is present at the site: Glenville silt loam, 0 to 3 percent slopes (GnA). This series consist of moderately well drained to somewhat poorly drained soils that have a fragipan. These soils occur in depressions around the heads of drains, and along the upper courses of drainageways on uplands in northern New Castle, Delaware. They developed in micaceous material that weathered mainly from mica schist.

A typical profile of the Glenville series consist of:

- 0 to 8 inches - Silt loam
- 8 to 30 inches - Silty clay loam
- 30 to 48 inches - Silty clay loam (fragipan)
- 48 to 54 inches - Silt loam

Some properties of the Glenville series are listed below:

- Permeability: 0.63 to 2.0 inches per hour
- Reaction (pH): 4.5 to 5.5
- Corrosivity (concrete): Moderate to high
- Corrosivity (uncoated steel): High

Three phases of the Hatboro series soils are present at the facility: Hatboro silt loam (Ha), Hatboro silt loam, local alluvium, 0 to 3 percent slopes (HbA) and Hatboro silt loam, local alluvium, 3 to 12 percent slopes (HbC). This series consist of deep, wet soils that occur on the Piedmont Plateau in northern New Castle County, Delaware. These soils occur on flood plains and on uplands. On the uplands, they lay around the heads of drains, along drainageways that do not have channels, and at the foot of slopes. They developed in materials that washed from areas of micaceous rocks, and they contain a considerable amount of fine mica.

Typical profile of the Hatboro series include:

- 0 to 42 inches - Silt loam
- 42 to 48 inches - Loamy fine sand

Some properties of the Hatboro series are listed below.

- Permeability: 0.20 to 6.3 inches per hour
- Reaction (pH): 4.5 to 5.5
- Corrosivity (concrete): High
- Corrosivity (uncoated steel): High

Two phases of Keyport series are located on site: Keyport silt loam, 0 to 2 percent slopes (KeA), and Keyport silt loam, 2 to 5 percent slopes - moderately eroded (KeB2). The Keyport series consist of deep, moderately drained soils that occur on uplands. These soils developed in old deposits of clay or silty clay.

A typical profile of the Keyport series is listed below:

- 0 to 7 inches - Silt loam
- 7 to 60 inches - Silty clay, silty clay loam, clay

Properties of the Keyport series include:

Permeability: <0.20 to 2.0 inches per hour
Reaction (pH): 4.5 to 5.5
Corrosivity (concrete): High
Corrosivity (uncoated steel): High

One phase of the Metapeake series is present at the facility - Metapeake silt loam, 2 to 5 percent slopes - moderately eroded (MeB2). The Metapeake series consist of deep, well drained soils that occur on uplands. They are the most extensive soils in the country, and account for about one-fourth of the total acreage.

A typical Metapeake profile consist of:

0 to 11 inches - Silt loam
11 to 26 inches - Silt loam, silty clay loam
26 to 32 inches - Very fine sandy loam
32 to 50 inches - Fine sandy loam

A few Metapeake properties are listed below:

Permeability: 0.20 to 5.5 inches per year
Reaction (pH): 4.5 to 5.5
Corrosivity (concrete): Moderate to high
Corrosivity (uncoated steel): Low to moderate

Two phases of the Sassafras series are found on the facility: Sassafras sandy loam, 0 to 2 percent slopes (SaA) and Sassafras sandy loam, 2 to 5 percent slopes - moderately eroded (SaB2). The Sassafras series consist of deep, well-drained soils on uplands. These soils developed in beds of sandy old sediments that contain moderate amounts of silt and clay.

A typical profile of the Sassafras series is listed below:

0 to 17 inches - Sandy loam
17 to 37 inches - Sandy loam, sandy clay loam
37 to 50 inches - Sand, loamy sand

Some properties of the Sassafras series include:

Permeability: 0.63 to 6.3
Reaction (pH): 4.5 to 5.5
Corrosivity (concrete): High
Corrosivity (uncoated steel): Low 11

Geology/Hydrology

The E.I. duPont Chestnut Run facility is located in the Appalachian Piedmont Province (See Figure 5) which is characterized by gently rolling hills. The surface of this complex is of very old metamorphic and igneous rocks which slope southeasterly.¹⁰ Delaware Piedmont rocks have been assigned to the Lower Paleozoic Era.¹²

This area of the Piedmont has been further classified as the Wilmington Complex. The Wilmington Complex may be of Precambrian age based on the association of characteristic Precambrian rock types. The Wilmington Complex rocks are tentatively interpreted as Glenville-age-basement (approximately one billion years old), remobilized during deformation of the Appalachians in the Paleozoic time.¹²

The Wilmington Complex consists largely of coarsely and vaguely banded gneiss with significant amounts of gabbro, amphibolite.¹³ Specific constituents include; hornblende-plagioclase gneiss containing small amounts of ortho and clinopyroxene, and pyroxene-plagioclase gneiss, amphibolite, and quartz-plagioclase gneiss which are meta-igneous and meta-sedimentary.¹²

The Igneous and altered rocks of the Wilmington Complex generally have low secondary permeability and the ground water yields are low. The yields of an average house well is one (1) gallon per minute and dry wells are common. Initial yields may decline with time by as much as 50 percent due to water being removed from within the rocks. Depth to ground water is approximately 25 to 30 feet.¹⁴

Climate/Meteorology

New Castle County Delaware has a humid, continental type climate that is typical of the Mid Atlantic states coastal areas. The nearby ocean modifies masses of air that pass over it before reaching the county. Easterly winds moving up the coast bring much of the precipitation to the county; these winds also raise the temperature in the winter and lower it in the summer.¹¹

Meteorological data was collected at the Wilmington Airport Weather Station located approximately 5 miles southeast of the E.I. duPont Chestnut Run facility.²

The average temperature for 1989 was 53.9°F. The coldest month for 1989 was February, with an average temperature of 34.2°F. The coldest temperature extreme of 1989 occurred on December 23, with a temperature of 4°F recorded. The hottest month for 1989 was August with an average temperature of 75.9°F. The hottest temperature extreme of 1989 was 96°F which occurred on July 26. The average temperature from 1959 to 1988 is 54.1°F.^{15,16}

Wind direction is predominately from the west-northwest, with an average velocity of 9.2 miles per hour. (See Wind Rose - Figure 6).¹⁷

Rainfall distribution throughout the year is fairly uniform, but the greatest amounts usually come during the summer months. Heavy rains occasionally cause minor flash flooding. The annual precipitation for 1989 was 59.14 inches¹⁵ with a mean lake evaporation of 32.00 inches.¹⁶ Subtracting the mean lake evaporation from the annual precipitation yields a net precipitation of 27.14 inches. The average annual rainfall from 1951 to 1980 is 41.38 inches. The one year - 24 hour rainfall is 3.80 inches.¹⁶

Critical Environments

According to DE DNREC Division of Parks and Recreation and the Division of Fish and Wildlife, there are no known endangered species of flora and fauna in the area of the duPont Chestnut Run facility. ^{18,19}

Associated with the Chestnut Run stream, eastern area of the property, is a Palustrine, open water, intermittently exposed/permanent diked impounded wetland. ²⁰

South of the facility, approximately 0.5 miles, is a Palustrine, forested, broad leaved-deciduous, temporary wetland area associated with the Willow Run Stream. This class of wetland area is used chiefly to provide food and cover for a wide variety of aquatic and terrestrial wildlife. The duPont Chestnut Run facility is located upstream from this wetland area and could potentially impact it by surface water releases from the facility. ^{2,21}

FIGURE 1

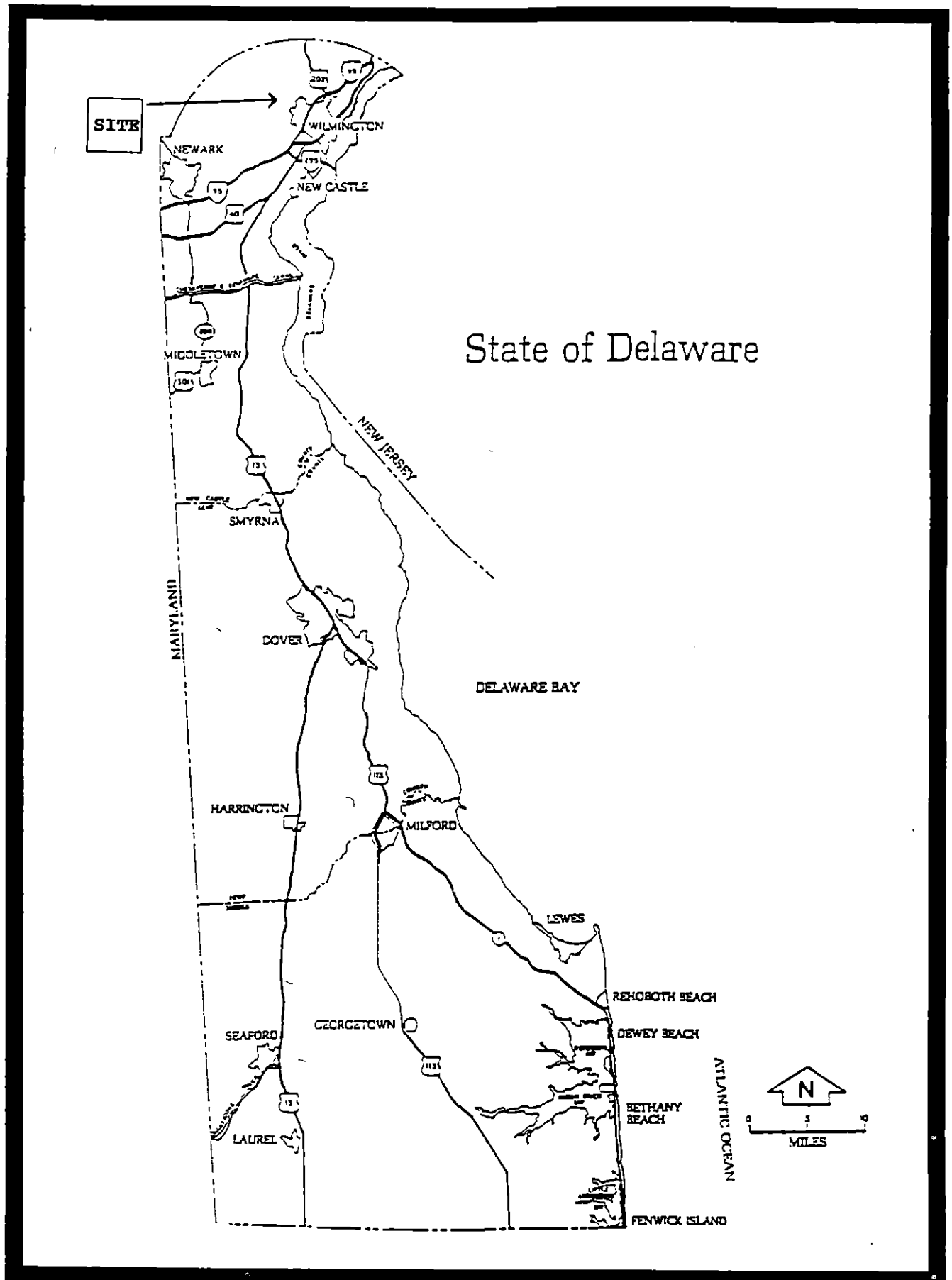


FIGURE 2

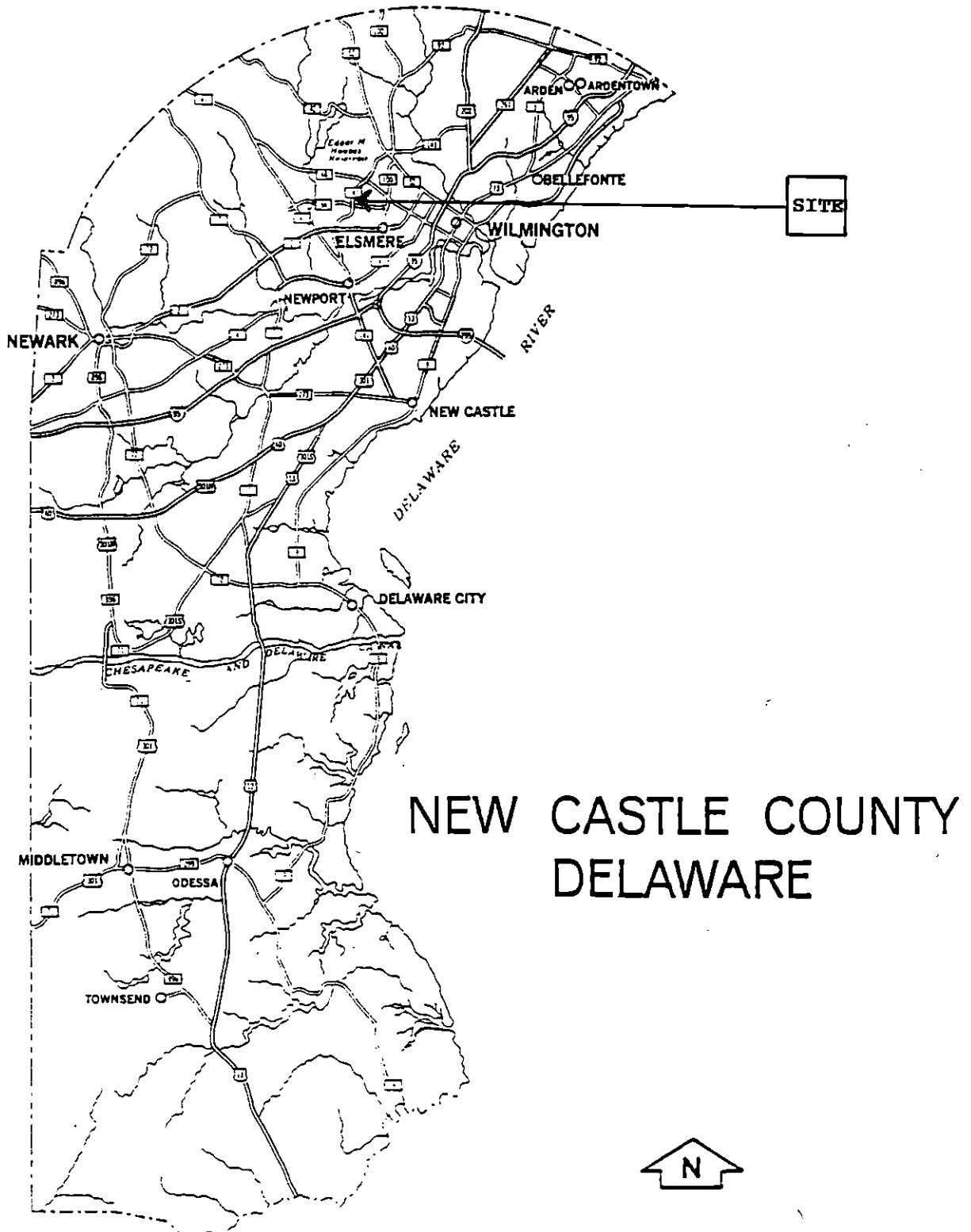
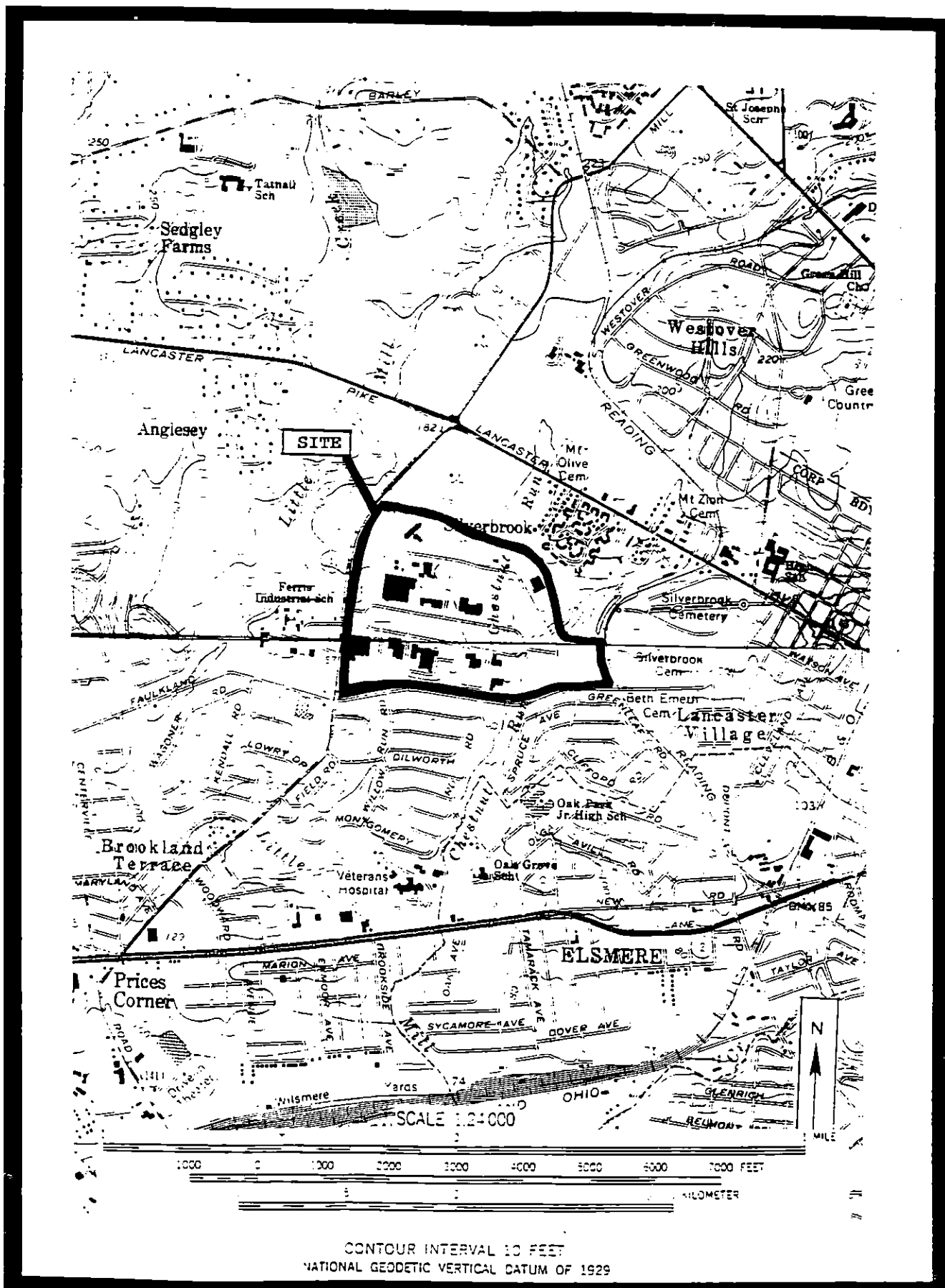


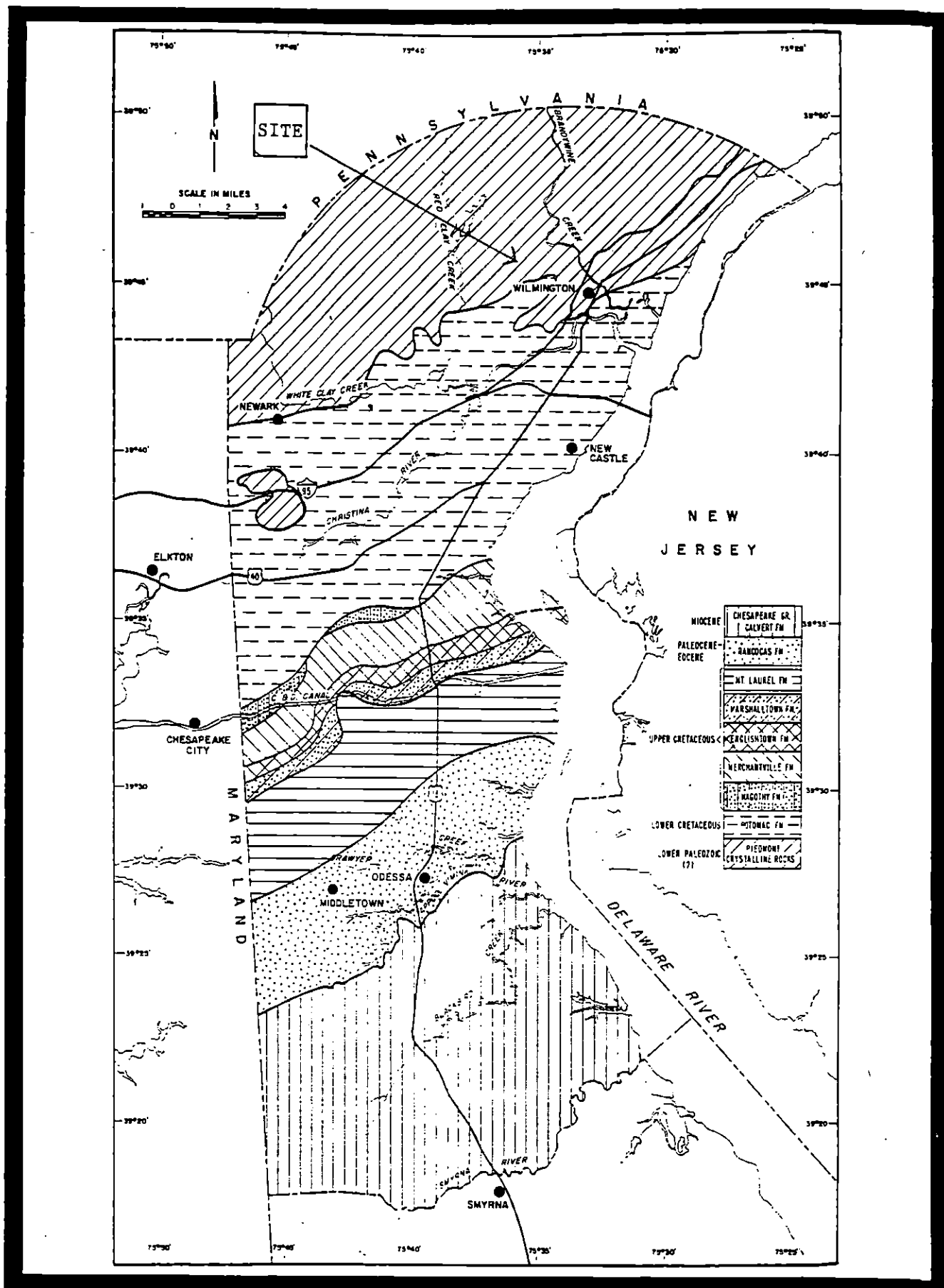
FIGURE 3

USGS TOPOGRAPHIC MAPS
WILMINGTON, NORTH QUADRANGLE
DELAWARE, 1973 AND
WILMINGTON, SOUTH QUADRANGLE
DELAWARE, 1967



Source - United States Dept. of Agriculture, Soil Conservation Services 1971.

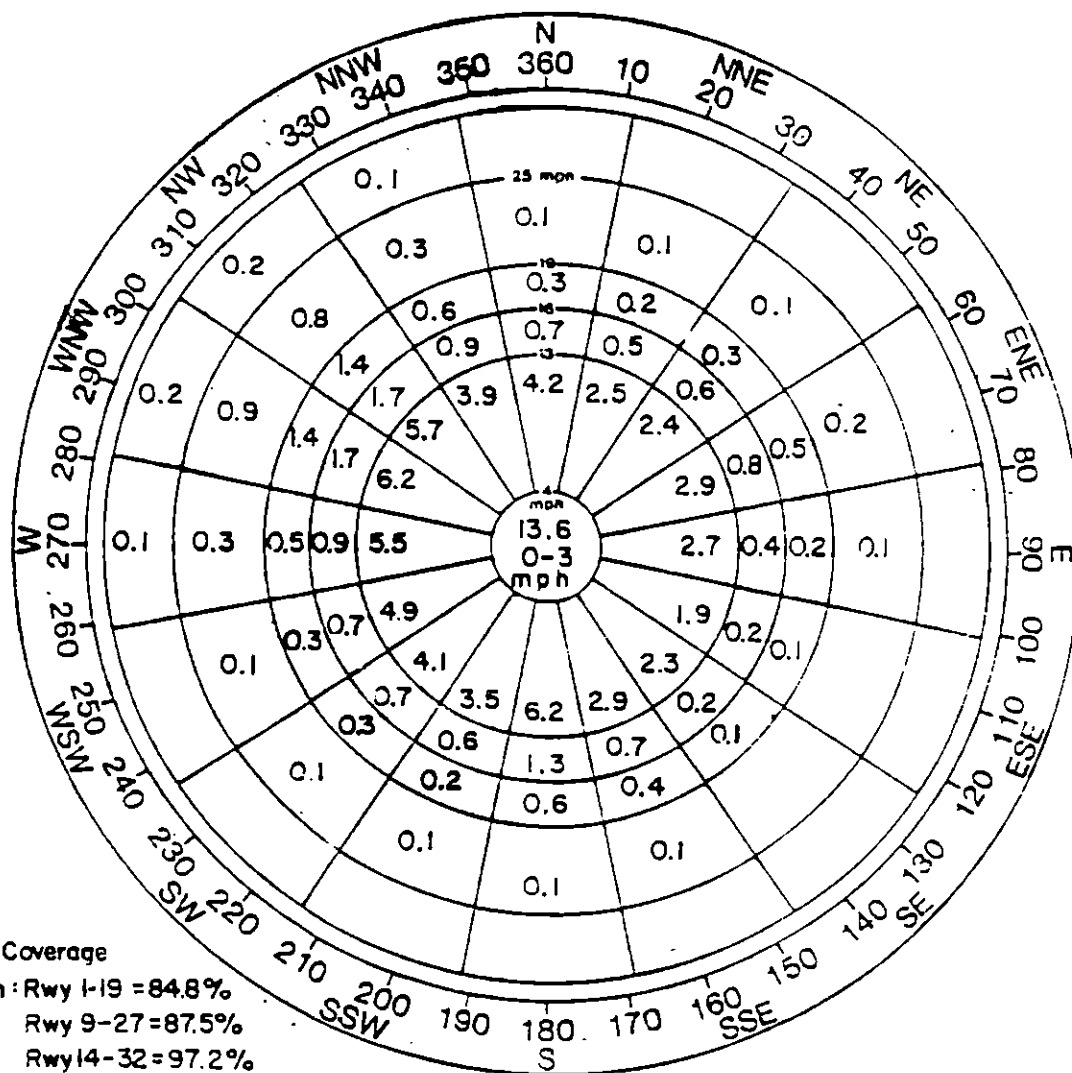
FIGURE 5
GEOLOGIC MAP OF NEW CASTLE COUNTY (PLEISTOCENE REMOVED).



Source: Sundstrom, R.W. and Pickett, T.E. July 1971

FIGURE 6

All Weather Wind Rose



90,577 Observations

III. FACILITY DESCRIPTION

General Description

Du Pont owns and operates the multi-departmental research facility known as the DuPont Chestnut Run Plaza, which employs approximately 3200 people. This facility is located along Route 141 and Lancaster Pike, in Wilmington, Delaware. The site consists of 19 buildings on approximately 240 acres (See figure 7). Eight of these buildings are exclusively used as office space. The facility landlord is the DuPont Materials, Logistics and Services.

X Chestnut Run was developed from farmland in 1952. Site activities include offices, product-research development, product testing, product end-use research and customer service. Departments represented at Chestnut Run include Fibers, Imaging, Chemicals, Polymers, and the former Electronics Department. Chestnut Run is defined by the Standardized Industrial Code (SIC) of 8734: engineering and management services, testing labs.

The Du Pont Fibers Department currently occupies three buildings: Buildings 701, 702 and 715. Buildings 701 and 702 were built in the mid-1950's, housing the Fibers and Composites Development Center (FCDC), a technical support center. FCDC activities include product application research, product candidate evaluation, product value adding and customer support in the areas of textiles, industrial fibers, composites and flooring systems.

Building 715 was built in 1962 by the former Industrial and Biochemical Department, as a development laboratory for molding/casting cores. In the 1970's, the Electrochemicals Department acquired the building for the research of various plating operations, including gold leaf plating, electronics plating, photo products etching, and electronics etching. In January 1991, the Fibers Department acquired Building 715 for an expansion of the Fibers and Composites Development Center.

The Polymers Department occupies four buildings at Chestnut Run. They include half of Building 711, Building 712, 713 and 714. Activities at these buildings are centered around thermoplastics research and development. Building 711, built in 1955, has three areas of focus: thermoplastics milling operations; a physical testing center and a latex laboratory that formulates and tests mixtures of latex dispersions.

Between 1954 and 1975, Building 712 was the technical support center for cellophane, a film product. In 1975 the cellophane operations moved to Building 713, where it remained until 1984, when it was discontinued. Both Building 712 and 713 are currently used for polymer packaging development, plastic and Teflon molding and extrusion, and product testing.

The other half of Building 711 is the Freon customer service center, operated by the Chemicals Department. Activities include analysis of Freon and Freon-alternatives, and the research and development of refrigerant products, aerosols and foams.

Building 709 is currently occupied by two business groups: Chemicals and Phillips Du Pont Optical (PDO). The building was built in 1958 by the former Electrochemical Department. In the early sixties, part of the facility was devoted toward pigment research, including paints and Lucite paints. Later,

Industrial Chemicals joined Pigments, and the Electrochemical operations were phased out by 1981. Polymer Products briefly acquired half of the facility, which in 1984 became the Phillips Du Pont Optical research laboratory, a joint venture with the Dutch-based Phillips Company. PDO activities involve research and development of optical disks used for information systems.

The Chemicals Department side of Building 709 is used as a research, development and customer service center. Activities include research on titanium dioxide pigments in paints and thermoplastics, and the development of urethane and terathane.

Building 708 was built in 1968 as a facility for research, development and customer service for Imaging, Medical, Electronics and D-SIMI business. Products and processes of interest include silver halide technology for photographic film, photographic processing solutions; printing plates and printing plate solution development; and pre-press proofing.

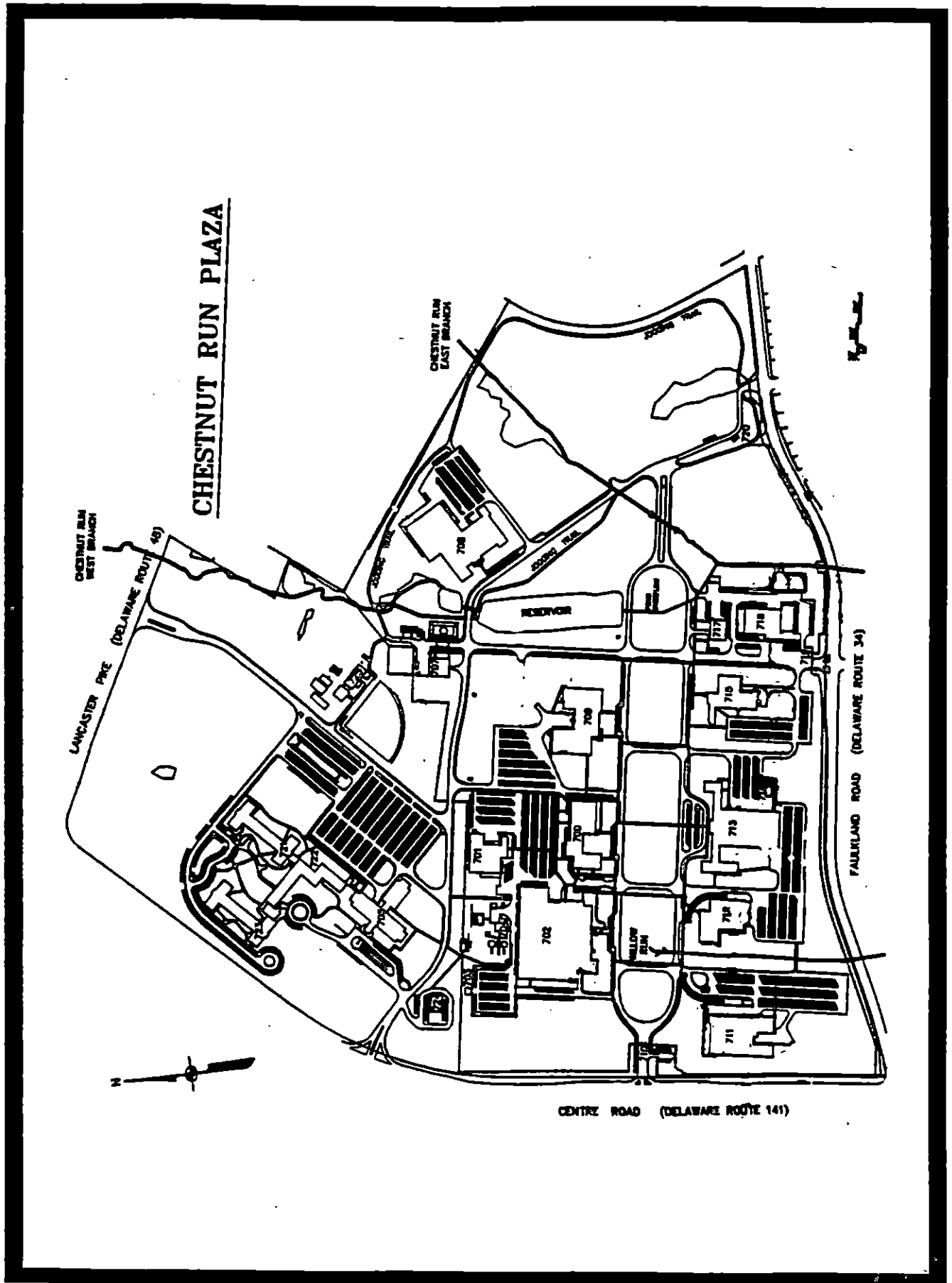
Buildings 717 and 718 are operated by Materials, Logistics, and Services Department. Building 717 was built in the early 1960's by the transportation group. It was acquired by the Engineering Department in 1981, and is currently owned by MLS. The building serves as the site maintenance shop. Activities include maintenance, fabrication and repair of equipment and machinery, welding, and sheet metal milling. Behind Building 717 is the groundskeeper's shed, which stores the landscaping equipment. Building 718 is the central shipping, receiving and storehouse for the entire site. Built in 1959, the main activities include shipping products to customers, receiving 85 - 90 % of material which come onto the site, as well as the storage and distribution of these materials. Building 718 also administers the site's RCRA permitted storage pad, non-hazardous waste storage area, and scrap metal yard.^{23,24}

For wastewater management, the site operates under an NPDES discharge permit, with outfalls 001 (Chestnut Run creek), 002 (Willow Run creek), and 003 (in front of Building 707). The discharges include stormwater run-off, steam and humidity condensate, non-contact cooling water, lawn irrigation run-off, and other non-regulated activities. Chestnut Run performs a variety of analytical testing at these outfalls, including BOD, TSS, pH, temperature, bioassay, chronic and toxic compounds. These outfalls are regulated under the Clean Water Act (CWA).⁷

The site also operates under a New Castle County Sanitary Sewer Permit, with discharge points identified as 010 CTC and 011 Main. The discharge includes sanitary waste, process wastewater, and boiler and cooling towers water. Building 702, Building 708, and Building 717 all monitor pH of the wastewater. Discharges are sampled quarterly for metals pH, TSS, NH3, BOD, cyanide, and phenolics. These discharges are regulated under the Clean Water Act (CWA).²⁵

The site has 11 air discharge permits for process vents and boilers, and an additional 75 air discharge exemptions. The majority of discharge exemptions are for lab hoods and small scale process vents. All of these discharges are regulated under the Clean Air Act (CAA).²⁶

FIGURE 7
CHESTNUT RUN SITE



Process Description of Waste Managed

The wastes generated on-site are the result of product development. Wastes are generated in small, irregular batches consisting of small packages of discarded laboratory chemicals, small sample mixes, excess and spent batches used in machine applications and discarded test products. Most of the site chemical wastes are innocuous and non-hazardous, as they stem from activities relating to finished products in the consumer trade. The hazardous wastes are principally organic spent solvents from non-specific sources, plus various characteristic wastes and lab-packs.

Wastes are stored and shipped for the most part in bung and open-top 55-gallon steel drums. Occasionally, smaller lots of specialized wastes are shipped in small cartons or less than 55-gallon steel or fiber drums. Small containers (less than 5-gallons) are overwrapped as lab-packs in compatible chemical groupings.^{23,24}

IV. Solid Waste Management Units

Twenty-seven (27) SWMU's were identified during the RFA and are listed below. Figure 6 shows the location of the SWMU's across the facility. While reading this section on SWMU descriptions, the reader should refer to other sections of this report which supplement and enhance the narratives.

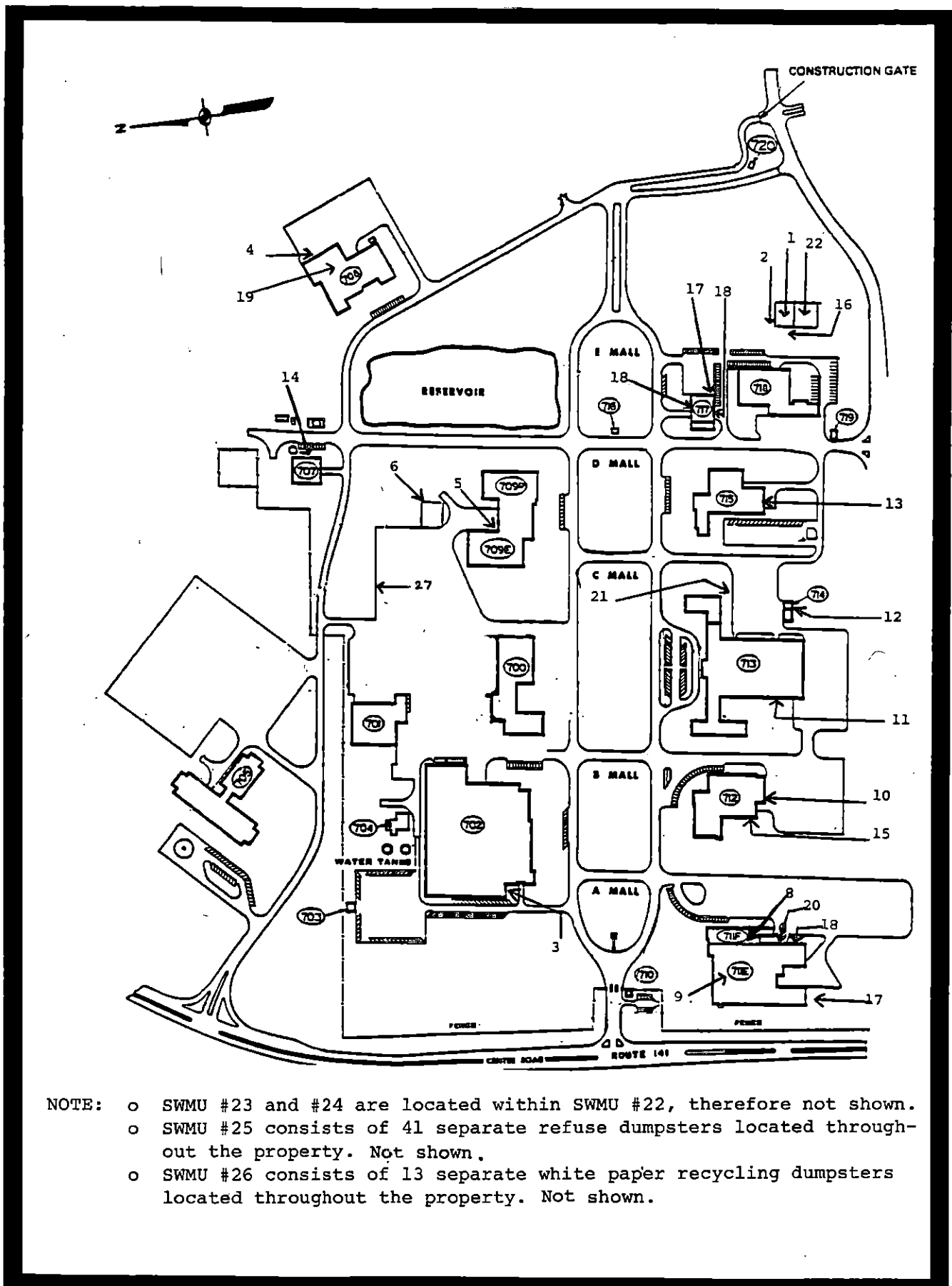
Solid Waste Management Units (SWMU's)

<u>SWMU</u> <u>#</u>	<u>Unit Name</u>	<u>Associated</u> <u>Photo Number</u>
1.	RCRA Permitted Hazardous Waste Pad	1
2.	RCRA Interim Status Hazardous Waste Storage Area	2
3.	Non-Hazardous Waste Storage Area - Building 702	3
4.	90-Day Hazardous Waste Accumulation Area - Building 708	4
5.	90-Day Hazardous Waste Accumulation Area - Building 709	5
6.	Test Equipment Storage Pad - Building 709	6
7.	90-Day Hazardous Waste Accumulation Area - Building 711(E)	7,8
8.	90-DAY Hazardous Waste Accumulation Area - Building 711(F)	9
9.	Crawlspace - Building 711(E)	10,11,12
10.	90-Day Hazardous Waste Accumulation Area - Building 712	13,14
11.	Non-Hazardous Waste Oil Storage Area	15
12.	Non-Hazardous Waste Storage Area - Building 714	16
13.	90-Day Hazardous Waste Accumulation Area - Building 715	17
14.	Underground Pipe Between Fuel Storage Tank and Power House	18
15.	Polyester Resin Cooling Dock and Refuse Dumpster	19
16.	Non-Hazardous Waste Storage Area	20,21
17.	Satellite Accumulation Area - Building 717	22
18.	Saw Dust Collection System	23,24,25,26
19.	Satellite Accumulation Area - Building 708	27
20.	Carbon Black Dust Collection Unit	28
21.	Process Polymer Waste Dumpsters	29
22.	Scrap Metal Storage Area	30,31
23.	Scrap Metal Dumpster	32
24.	Asbestos Dumpster	32
25.	Refuse Dumpsters	5,25,33,34,35
26.	White Paper Recycling Dumpsters	36
27.	Aluminum Can/Plastic Bottle Recycling Bins	37

FIGURE 8

CHESTNUT RUN SITE

SWMU LOCATION MAP



Unit 1: RCRA Permitted Hazardous Waste Pad

Unit Description: Chestnut Run currently operates a hazardous waste drum storage area under a RCRA Part B permit, located behind Building 718. The permitted storage pad is a 50' by 40' concrete pad permitted to manage 175 standard 55-gallon drums. It is surrounded by a 6" high concrete curb, 1' wide, except for the 10' wide, sloped entrance. Potential spills or releases within the pad would be contained by the double concrete trench system, 12" wide by 18" deep, across the center line, with both halves of the permitted storage pad are sloped toward these trenches. This trench system avoids any standing liquids from coming in contact with the drums.

The 10' sloped entrance to the pad also has a connecting section of the containment trench. Run-on from the adjacent road way is prevented by the perimeter curb plus a 6 inch up-slope at the entrance. The cross-trench also serves as a backup for run-on prevention.

In the unlikely event of a release within the permitted storage pad, the trench would capture and contain all material. A manual pump would be used to pump out any collected liquids into a drum, with the drummed cleanup material then discarded as a hazardous waste. A manually operated discharge valve at the rear of the trench system allows for the discharge of precipitation after verification of composition. However, since the permitted storage pad is covered, stormwater rarely accumulates on the pad.

Date of Start-Up: September, 1984

Date of Closure: Still Active

Waste Managed: Printing plate solvent waste, mixed aqueous lab waste, non halogenated lab solvents, packaged laboratory chemicals (lab paks), and halogenated lab solvent waste.

Release Controls: concrete pad; 6" high concrete curb; 10' wide sloped entrance; double concrete trench system.

History of Release: No evidence or history of releases.

References: 23,24

Unit 2: RCRA Interim Status Hazardous Waste Storage Area

Unit Description: Previous to the construction and permitting of the permitted storage pad, Chestnut Run operated a hazardous waste drum storage pad under a RCRA interim, or Part A, permit (the A-pad), located adjacent to the permitted storage pad behind Building 718. The A-pad consisted of an 75' x 30' asphalt area and adjacent 30' x 30' concrete pad with curbing. It originally had a capacity of 272 drums. Sometime around 1982 the use of the asphalt part of the A-pad for waste storage terminated, and the concrete curbed pad became the only section used. The use of the interim pad for hazardous waste management was discontinued in 1984, when Chestnut Run received a RCRA Part B permit to operate the permitted storage pad (SWMU #1).

The A-pad closure requirements included removal of all containers or hazardous wastes, remediation of any residuals, decontamination of surfaces if needed, based on examination or data obtained, and certification of closure by a Professional Engineer. At the time when the A-pad ceased hazardous waste storage, all of the closure requirements except for the certification were completed. In 1989, Du Pont became aware of this omission, and obtained a certified closure from a Professional Engineer, based on rinsate and soil samples. Analysis of the rinsate and soil samples showed no contamination. A Professional Engineer (Lee Beetschen of Cabe Associates, Inc., Dover, DE) certified the closure of the interim status pad. This certification was provided to DNREC April 9, 1990, and is currently under review, pending DNREC approval.

Date of Start-Up: 1980

Date of Closure: Pending certification of RCRA closure by DNREC. (Use of the pad was discontinued in 1984.)

Waste Managed: Same as SWMU #1

Release Controls: Asphalt lot, concrete curbing (the concrete curbing was fractured in various places).

History of Release: No evidence or history of releases.

References: 23,24

Unit 3: Non-Hazardous Waste Storage Area - Building 702

Unit Description: This chemical storage area, located within the west wing of Building 702, has been in service since 1977. It stores and distributes the small quantities of lab chemicals used by the Fibers and Composites Development Center (FCDC), Buildings 701 and 702. Additionally, this area is used for the accumulation of various non-regulated solids (carpet fibers, textile swaths, and scrap Kevlar) and waste oils. Old lab chemicals are repackaged for disposal in lab-packs in this area, and are disposed directly from this location. No hazardous wastes are stored in this area, since these chemicals are not classified as wastes until placed in the lab packs (i.e.: discarded).

The area is contained and divided into three sections by concrete diking. The first segment contains shelves for lab chemicals, mostly small containers ranging from less than 1/2 pint to 1-2 gallons. The maximum amount of material in this segment of the pad is approximately 25 gallons. These chemicals are separated according to their physical properties.

The other two segments of the pad hold 55-gallon drums of non-regulated waste oils, non-regulated waste solids (i.e.: Teflon, fibers, and plastic), and virgin acetone (for distribution). Empty drums are temporarily stored in this area for future use in lab packs and waste oil accumulation.

The old lab chemicals are periodically collected and re-packaged as lab pack by Chemical Waste Management, Inc. Once the lab-pack is generated, it is moved to the permitted storage pad, and then to off-site disposal. The waste oils are also sent to the permitted storage pad prior to off-site disposal. The solids are sent directly to an industrial landfill for disposal.

Date of Start-Up: 1977

Date of Closure: Still active

Waste Managed: Lab chemicals, non-regulated waste oils, non-regulated waste solids (i.e.: Teflon, fibers, and plastics), virgin acetone, and discarded gloves and clothing.

Release Controls: Cement pad; concrete diking; roof; chain link fence

History of Release: On March 21, 1989 1/2 gallon of a mixture of acetone, ethanol and n-methylpyrrolidone spilled onto the pad and was contained within the diked area. The material was then cleaned up, and disposed with the other non-hazardous wastes. This secondary containment system adequately contains any spill, and prevents environmental impact.

References: 23,24

Unit 4: 90 Day Hazardous Waste Accumulation Area - Building 708

Unit Description: The unit is a 90-day hazardous waste accumulation area for Building 708, Imaging Department. It consists of a concrete pad enclosed on three sides by corrugated metal walls, and a 6' chain-link fence across the front. The area is also covered by a metal roof.

This area manages printing ink wastes, waste Isopar-G and carbon particles (printing toner), and two kinds of spent flexographic printing plate solvent. One of the printing plate wastes is Optisol solvent waste resulting from the filtration of the solvent to remove synthetic rubber, nonyl acetates, benzyl alcohol, methacrylates/acrylates and substituted benzoin. The second waste stream from the printing plate process area is spent Perc-n-Butyl solvent, which is being phased out of use. This waste consists primarily of perchloroethylene, N-butanol, synthetic rubber and methacrylates/acrylates.

Approximate annual amounts of these wastes managed are: 100 gallons of printing ink waste; 150 gallons of waste toner, 200 gallons of Perc-n-Butyl waste, and 150 gallons of Optisol solvent recovery wastes. Wastes are sent to the site's permitted storage pad, prior to off-site disposal.

Date of Start-Up: The building was built in 1968 - the start-up date is 1980.

Date of Closure: Still active

Waste Managed: Printing ink waste; waste Isopar-G; carbon particles (printing toner); Optisol solvent contaminated with synthetic rubber, nonyl acetates, benzyl alcohol, methacrylates/acrylates and substituted benzoin; Perc-n-Butyl solvent.

Release Controls: Concrete pad; corrugated metal walls (three sides); 6' chain link fence; roof; 8" concrete dike; trench system; 200 gallon concrete sump (no outlet)

History of Release: No evidence or history of releases.

References: 23,24,27

Unit 5: 90-Day Hazardous Waste Accumulation Area - Building 709

Unit Description: The loading dock off Building 709, primarily used for receiving and shipping, has a small area that is used for 90-day hazardous waste accumulation, as well as solvent storage and disbursal. The dock consists of a concrete deck elevated 4 feet above the surface of the driveway, and is covered by a metal roof. There are no floor drains in the area.

The Chemicals Department and Phillips DuPont Optical (PDO), share the building as well as the use of the loading dock and 90-day waste accumulation area. The Chemicals Department maintains one 55-gallon drum for the 90-day accumulation of waste ethyl acetate. Because of the crowded conditions on the loading dock, when a drum is full, it is moved to the nearby concrete storage pad, about 100 feet from the loading dock, prior to removal to the site permitted storage pad. Approximately 1500 gallons of waste ethyl acetate is generated annually.

PDO maintains two 55-gallon drums, one for waste halogenated solvents and one for waste non-halogenated solvents. The waste halogenate solvents consist of methylene chloride and Freon. The waste non-halogenated solvents contain acetone, n-methyl pyrrolidone, methanol, ethanol, n-butanol, isopropanol, methyl ethyl ketone, methylisobutyl ketone, diacetone alcohol and toluene. The solvent waste is generated from operations involving research and development of optical disks; primarily from disk degreasing and equipment cleaning. Approximately 350 gallons of waste halogenated solvents and less than 100 gallons of waste non-halogenated solvents are generated annually. During the 90-day accumulation period, or when a drum is full, whichever comes first, the drum is moved to the site's permitted storage pad prior to off-site disposal. PDO does not utilize the nearby concrete pad.

In an area adjacent to the waste accumulation area, the Chemicals Department stores raw chemicals and solvents including xylene, ethyl acetate and mineral spirits.

Date of Start-Up: The building was built in 1958 - accumulation start date is 1961.

Date of Closure: Still active

Waste Managed: Waste ethyl acetate; waste halogenated solvents - methylene chloride and Freon; non-halogenated solvents containing acetone, n-methyl pyrrolidone, methanol, ethanol, n-butanol, isopropanol, methyl ethyl ketone, methylisobutyl ketone, diacetone alcohol and toluene.

Release Controls: Concrete deck (elevated 4 feet above surface of driveway); metal roof.

History of Release: No evidence or history of releases.

References: 23,24,27

Unit 6: Test Equipment Storage Pad - Building 709

Unit Description: This storage pad, located 100 feet from Building 709 loading dock, is a 20' by 30' concrete pad, built in the 1970's as a test pad for a concrete study. In 1988, it was replaced. It is now used to store clean test equipment used in mill trials at various customer locations. This equipment is cleaned at the customer's site before storage at Building 709. In addition, when the Chemicals Department at Building 709 has filled a drum at their 90-day hazardous waste accumulation area (SWMU #5), they move the drum over to this concrete pad for temporary storage, prior to shipment to the site permitted storage pad. In the past, the pad stored waste ethyl acetate for very short periods of time. Additionally, the pad was once used in 1985 to repackage drums.

Date of Start-Up: 1984

Date of Closure: Still active

Waste Managed: Waste ethyl acetate

Release Controls: Concrete floor

History of Release: No evidence or history of releases.

References: 23,24,27

Unit 7: 90 Day Hazardous Waste Accumulation Area - Building 711(E)

Unit Description: For the past 15 years, the Polymers Department has operated a 90 day hazardous waste accumulation area behind Building 711E. The 80' by 30' pad is enclosed by a metal wall and chain-link fence. It has a concrete floor and a metal roof.

There are four drums for waste accumulation: one for spent organic solvents, one for spent halogenated solvents, and two for non-regulated waste oils. Less than 100 gallons each of organic solvents and halogenated solvents, and about 1000 gallons of waste oils are managed annually at this pad.

In addition to the drums, small quantities of lab chemicals are managed in this area. Periodically, Chemical Waste Management, under contract with the site, packs these lab chemicals (approximately 55 gallons annually) into lab-packs, and transports them to the site's permitted storage pad prior to off-site disposal. These lab chemicals are not classified as hazardous wastes until they are packaged into the lab-packs (i.e.: point of waste generation).

The pad is also used for storage of raw chemicals, solvents and oils, and for storage of empty drums.

Date of Start-Up: 1954

Date of Closure: Still active

Waste Managed: Organic solvents; halogenated solvents; non-regulated waste oils; lab chemicals.

Release Controls: Concrete floor; metal roof; 8 inch concrete dike; the floor slopes toward floor trench with 400 gallon concrete sump.

History of Release: On the day of the VSI, a small amount of liquid was located within the concrete sump. The liquid seemed to have a sweet smell, no readings were observed on the Photo Ionization Detector. Some staining was evident on the collection system gate.

References: 23,24,27

Unit 8: 90-Day Hazardous Waste Accumulation Area - Building 711(F)

Unit Description: This 90-day waste accumulation area, located at the southwest corner of building 711, is a concrete pad used for raw solvent storage and hazardous waste accumulation. The pad is 25' by 10', and is enclosed in a metal mesh fence on three sides and the brick wall of the building on the fourth side. The pad has a fiberglass roof and a concrete floor that slopes to an 8" containment dike. The dike has a plugged drain. Once manually unplugged it drains into the sewer system.

Wastes are accumulated in three 55-gallon drums. One drum contains waste halogenated solvents, mostly Freon. One drum contains non-halogenated solvents, and the third contains non-hazardous waste oils, which are mainly refrigeration and heat transfer oils. Approximately 840 gallons of waste halogenated solvents, about 1600 gallons of waste oils, and less than 100 gallons of waste halogenated solvents are managed annually at this pad.

Raw solvents stored on the pad include various halogenated solvents such as Freon, 1,2 dichloroethylene, dichlorofluoroethane and others. The pad holds fifteen 55-gallon drums of solvents, as well as two shelves with 5-gallon containers of solvents.

Date of Start-Up: Building 711 was built in 1955, the date of start-up is 1972.

Date of Closure: Still active

Waste Managed: Halogenated solvents; non-halogenated solvents, non-hazardous waste oils.

Release Controls: Concrete pad; metal mesh fence on 3 sides; brick wall of building 711 on one side; fiberglass roof; concrete floor slopes toward 8 inch containment dike; plugged drain.

History of Release: No evidence or history of releases.

References: 23,24,27

Unit 9: Crawlpace - Building 711(E)

Unit Description: The crawlpace beneath Building 711, located beneath the Milling Room and the Polymer Development Area, provide access for servicing the overhead milling machinery, utilities, and water lines. In February 1990, during an asbestos abatement project of the piping, the stone aggregate and loose dirt from the floor of the crawlpace was removed, revealing oil staining of the soil within the crawlpace below the Milling Room. The oil presumably came from leaking overhead milling machinery. These machines use oil as a heat transfer fluid for hot roll milling work.

Date of Start-Up: 1955

Date of Closure: Still active - currently under investigation

Waste Managed: Asbestos; heat transfer oil

Release Controls: During the first week of July, 1991, the crawl space was encapsulated with concrete.

History of Release: The oil from leaking overhead milling machinery from 1955 to present. A soil investigation conducted in February 1991 revealed localized areas of soil discoloration to a maximum depth of 5 feet in the crawlpace. Chestnut Run initiated soil sampling and the results of this analysis show Total Petroleum Hydrocarbon (TPH) contamination as high as 38,000 ppm. Chestnut Run has begun additional investigation (4 soil borings around the building perimeter) to determine if the oil has migrated.

In addition to the TPH, the soil contains elevated levels of asbestos, resulting from the piping insulation. Therefore, in order to prevent the release of airborne asbestos fibers, as well as protect the soils from further oil contamination, the entire crawlpace was concreted in order to encapsulate the asbestos.

References: 6,23,24

Unit 10: 90 Day Hazardous Waste Accumulation Area - Building 712

Unit Description: This area, located inside Building 712, has been used for 15 years as a storage facility for virgin and waste solvent storage. The unit is a 9' x 12' enclosed storage room within Building 712, designed to store flammable liquids and waste solvents. It is on the site's 90-day hazardous waste accumulation areas.

The unit manages spent chlorinated and non-halogenated solvents. The wastes are generated in small batches during thermoplastic research, development and testing. Approximately 120 gallons of spent chlorinated solvents and less than 25 gallons of non-halogenated solvents are handled annually. Once waste solvents are accumulated for up to 90-days, they are sent to the site permitted storage pad prior to off-site disposal.

There are a variety of virgin organic solvents stored at this facility, including toluene, isopropyl alcohol, acetone, propanol, DMSO, and a variety of others. The solvents are stored in containers ranging in size from less than 1 liter up to 5 gallons. The maximum quantity of solvents on hand at one time is about 150 gallons.

Date of Start-Up: Building 712 was built in the 1950's.

Date of Closure: Still active

Waste Managed: Spent chlorinated solvents; non-halogenated solvents, non-regulated waste oil

Release Controls: Unit 10 is located inside Building 712; the floor slopes to a floor drain leads to two 55 gallon drums located in a cement-floored crawlspace for spill containment.

History of Release: No evidence or history of releases.

References: 23,24

Unit 11: Non-Hazardous Waste Oil Storage Area

Unit Description: A 28' by 5' section of the loading dock of Building 713 serves as an accumulation area for non-hazardous waste oil and raw chemical storage associated with the thermoplastics molding, extruding and testing activities. The area, protected on three sides by metal walls and is covered by a metal roof. The concrete floor of the loading dock is raised about 4' above the level of the paved truck unloading area. Behind the storage area there is a concrete gutter for stormwater run-off, which slopes down to the level of the pavement and adds further protection to the adjacent soil.

The raw materials stored in this area include glycols, heat transfer oils, hydraulic fluids and motor oil. No solvents are managed in this area.

Date of Start-Up: 1955

Date of Closure: Still active

Waste Managed: Non-hazardous waste oil

Release Controls: Metal walls (3 sides); metal roof; concrete floor - raised 4 feet above level of paved truck unloading area; concrete gutter for stormwater run-off that leads to the asphalt parking area.

History of Release: No evidence or history of releases.

References: 23,24

Unit 12: Non-Hazardous Waste Storage Area - Building 714

Unit Description: Building 714 serves as a small laboratory off Building 713 where plastic automotive parts are tested. There is a storage area outside of the building protected by an overhanging roof and concrete floor. From the early 1970's to 1988 a 9' by 5' section of the storage area was used for hazardous waste accumulation. Currently, the area is used only to store raw chemicals and non-hazardous waste.

Hazardous wastes that were formerly stored were halogenated solvents, non-halogenated waste solvents, waste oils and a waste formic acid polymer solution. However, all hazardous wastes are now managed at the Building 711 90-day waste accumulation area. Currently, only non-hazardous waste oil is managed at the Building 714 storage area.

Date of Start-Up: 1970's for hazardous waste accumulation
1988 for non-hazardous waste oil

Date of Closure: 1988 for hazardous waste accumulation
Still active for non-hazardous waste oil

Waste Managed: Hazardous waste (1970's to 1988): halogenated waste solvents; non-halogenated waste solvents; waste oils; waste formic acid polymer solution.
1988 to present: non-hazardous waste oils

Release Controls: Overhanging roof; concrete floor; secondary containment system (two 4.5' x 4.5' x 1' metal catch pans covered by a metal grate).

History of Release: No evidence or history of releases.

References: 23,24

Unit 13: 90-Day Hazardous Waste Accumulation Area - Building 715

Unit Description: The Electronics Department maintained a 90-day hazardous waste accumulation area on the loading dock off of the plating area and raw chemical storage shed. This loading dock area has a concrete floor and a roof. Wastes managed include halogenated solvents used in electronics etching operations, and other waste chemicals used in etching and plating operations such as copper, sodium hydroxide, formaldehyde, sulfuric acid, thiourea, sodium persulfate, n-butylethanol etc. In addition, filtrate from the solvent filtration process was stored in this area including filtrate 1,1,1 trichloroethane and methylene chloride. Annual quantities of wastes managed are approximately 7000 gallons of mixed aqueous including acidic, alkaline, organic and approximately 600 gallons of halogenated solvents.

The former Electronics Department also maintained an in-line wastewater neutralization system off of the east side of the same loading dock. The neutralization tank is a 620 gallon FRP tank with a 500 gallon capacity. The tank sits in a concrete structure that is 7' by 9' by 3' deep that serves as a secondary containment vessel.

A waste oil and waste solvent collection system was moved from an off-site duPont facility into this area. The unit has not been used as of the VSI. The unit will be used in the future.

Start-Up Date: 1970's

Closure Date: January 1991

Waste Managed: Halogenated solvents; etching and plating waste chemicals (i.e. copper, sodium hydroxide, formaldehyde, sulfuric acid, thiourea, sodium persulfate, n-butylethanol); filtrate from solvent filtration

Release Controls: Concrete floor; roof

History of Release: On September 13, 1989, approximately 5 gallons of a 20% sulfuric acid, 4% tin sulfate solution spilled onto the roadway at the loading dock area after being struck by a forklift. The forklift operator abated the spill by containing the area with sand and neutralizing the acid with sodium bicarbonate. The spill was confined to the blacktop area, and it did not enter the sewer or contact any soil. There was no impact to the environment as a result of the incident.

On March 2, 1986, a chilled water tube ruptured inside the solvent recovery (closed loop filtration of solids from solvent) room, causing an overflow into a shallow, diked sump inside the building. The water, which was estimated to have less than 250 ppm 1,1,1 TCA, ran onto the loading dock. Vermiculite dikes were built to prevent the spill from progressing further, and 300 gallons of contaminated water were collected in drums. The spill did not reach the storm drain or contact any soil. There was no impact to the environment as a result of the incident.

References: 23,24

Unit 14: Underground Pipe Between Fuel Storage Tank and the Power House.

Unit Description: On October 21, 1986, a leak was observed in an underground line between Building 707 (power house) and the fuel oil tank. The leak was repaired and all oil contaminated soil was excavated, placed in 55 gallon drums, and disposed of off-site.

Within the same general area as the above mentioned SWMU is the fuel oil tank unloading dock. This fuel oil unloading dock is for the transfer of fuel oil from trucks to the fuel tank. The dock is a small concrete pad with 3' walls on three sides. The open side is adjacent to an asphalt roadway. The adjacent roadway slopes down to a concrete containment trench.

Date of Start-Up:

Date of Closure: Still active

Waste Managed: Fuel oil

Release Controls:

History of Release: October 21, 1986 - leaking underground fuel oil line.

References: 24,27,28

Unit 15: Polyester Resin Cooling Dock and Refuse Dumpster

Unit Description: Adjacent to Unit #10, on the South side of Building 712, is a dock area used to cool hot polyester resin prior to disposal. The polyester resin is generated from polymer packaging development, plastic molding and extrusion testing.

The hot solidified polyester resin is transported to the dock area by way of wheelbarrows. It is left to cool, approximately 24 hours, then dumped into a refuse dumpster adjacent to the dock.

Date of Start-Up: 1975

Date of Closure: Still active

Waste Managed: Polyester resin

Release Controls: Elevated cement dock area

History of Release: No evidence or history of releases

References: 24,27

Unit 16: Non-Hazardous Waste Storage Area

Unit Description: Non-hazardous, solid waste is temporarily stored in the asphalted area adjacent to the permitted storage pad and scrap metal area, behind Building 718. It is the area outside the fenced scrap metal area. All waste material is containerized before it is stored at this location, and the vast majority of the non-hazardous waste is Teflon from the Polymers Department. This area has been used for solid waste management since the 1960's.

Date of Start-Up: 1960's

Date of Closure: Still active

Waste Managed: ~ Non-hazardous waste Teflon

Release Controls: Asphalt paved area

History of Release: No evidence or history of releases.

References: 23,24

Unit 17: Satellite Accumulation Area - Building 717

Unit Description: This satellite accumulation area is located behind building 717 which serves as a site maintenance shop. Activities include maintenance, fabrication, repair of equipment and machinery, welding, and sheet metal milling.

Date of Start-Up: 1987

Date of Closure: Still active

Waste Managed: Parts cleaning solvents; non-regulated waste oils

Release Controls: Cement pad; 1 foot high dike; metal roof; back-cement wall; release valve; grated trench.

History of Release: No evidence or history of releases.

References: 24,27

Unit 18: Saw Dust Collection System

Unit Description: The cyclone collection systems pull air off of maintenance equipment (circular saws, sanders, grinders, etc.) and collects wood saw dust, plastic dust and metal shavings in 55 gallon drums. Saw dust makes up the bulk of the collected material.

These maintenance areas are used only sporadically for maintenance, fabrication, and the repair of equipment. All collected material is placed in the refuse dumpsters.

Locations of the saw dust collection systems include: building 713, building 711(E) and building 717. Buildings 711(E) and 713 have one collection system each while building 717 has two collection systems located on opposite sides of the building.

Date of Start-Up: Building 717 - 1987
Building 713 - August 1989
Building 711(E) - 1977

Date of Closure: All units still active

Waste Managed: Wood saw dust; plastic dust; metal shavings

Release Controls: Enclosed metal 55 gallon drums

History of Release: No evidence or history of releases

References: 24, 27

Unit 19: Satellite Accumulation Area - Building 708

Unit Description: The satellite accumulation area is located within one of the labs of building 708, Imaging Department.

This area manages printing solvent waste prior to moving the waste to the building 708 90 day accumulation area - SWMU #4.

Date of Start-Up: June, 1991

Date of Closure: Still active

Waste Managed: Printing solvent waste

Release Controls: The satellite drum is located within building 708

History of Release: No evidence or history of releases

References: 24,27

Unit 20: Carbon Black Dust Collection Unit

Unit Description: An area located within building 711 is the thermoplastics milling operations. Thermoplastics research is conducted in conjunction with hot roll polymer milling. Associated with this milling operation is a large dust collection unit. This unit collects carbon black, which is used in the milling process. According to duPont representatives, the dust collection unit has never been emptied due to the small amounts of carbon black used.

Date of Start-Up: 1972

Date of Closure: Still active

Waste Managed: Carbon black dust

Release Controls: Totally enclosed steel unit; two release doors for the emptying the unit; asphalted area

History of Release: No evidence or history of releases

References: 24,27

Unit 21: Process Polymer Waste Dumpsters

Unit Description: Small steel dumpsters are utilized within buildings 711 and 713 for the collection of waste polymers. The small dumpsters are pushed inside, filled and then pushed back outside for disposal pick up. The waste polymers are disposed of at the Delaware Solid Waste Authority New Castle landfill.

Date of Start-Up: 1955

Date of Closure: Still active

Waste Managed: Waste polymers

Release Controls: Steel dumpsters; asphalt paved area

History of Release: No evidence or history of releases

References: 24,27

Unit 22: Scrap Metal Storage Area

Unit Description: This area is a 75' x 90' asphalt paved area, enclosed with a fence, located adjacent to the permitted storage pad behind Building 718. It has been used for waste management, mostly scrap metal storage; since the 1960's. Materials managed in this area include new and clean metal drums, construction equipment, lumber, the scrap metal, and empty drums stored prior to off-site reclamation. In addition, an enclosed roll-box of asbestos and fiberglass wastes is stored in this area prior to off-site disposal. Chemical Waste Management leases a section of this area for the storage of materials used in lab-pack generation, such as drums and packaging materials. In total, up to 100 drums are located in this area at a time.

Date of Start-Up: 1960's

Date of Closure: Still active

Waste Managed: Scrap metal; empty drums; asbestos; fiberglass waste

Release Controls: Asphalt paved area; fence

History of Release: No history or evidence of releases

References: 23,24,27

Unit 23: Scrap Metal Dumpster

Unit Description: Located within the Scrap Metal Storage Area (Unit 15) is an open-top scrap metal collection dumpster. Scrap metal is collected in the dumpster for off-site reclamation.

Date of Start-Up: 1976

Date of Closure: Still active

Waste Managed: Scrap metal

Release Controls: Asphalt paved area

History of Release: No evidence or history of releases

References: 23,24,27

Unit 24: Asbestos Dumpster

Unit Description: Located within the scrap metal storage area (unit #15), is a roll-box type dumpster used for the storage of asbestos from abatement projects, prior to off-site disposal.

Date of Start-Up: 1988

Date of Closure: Still active

Waste Managed: Asbestos

Release Controls: Asphalt paved area; enclosed metal dumpster

History of Release: No evidence or history of releases

References: 23,24,27

Unit 25: Refuse Dumpsters

Unit Description: Located outside of each building are refuse dumpsters. The dumpsters are used for solid waste disposal. Waste from the dumpsters are transported to the Delaware Solid Waste Authority Landfill. Total number of dumpsters is 41.

Date of Start-Up: 1955

Date of Closure: Still active

Wastes Managed: Solid waste ("garbage")

Release Controls: Covered; non-corroded containers; frequent emptying

History of Release: No evidence or history of releases

References: 23,27

Unit 26: White Paper Recycling Dumpsters

Unit Description: Located throughout the facility are 13 dumpsters used to collect white paper for recycling. No other waste materials are collected in these dumpsters. All collected white paper is transported off-site for recycling.

Date of Start-Up: 1990

Date of Closure: Still active

Waste Managed: White office paper

Release Controls: Totally enclosed, non-corroded, metal dumpsters

History of Release: No evidence or history of releases

References: 24,27

Unit 27: Aluminum Can/Plastic Bottle Recycling Bins

Unit Description: Located adjacent to the rear parking lot of building 709 is one large cage-type dumpster for aluminum cans and three cage type dumpsters for plastic milk containers and two liter soda bottles for recycling. Only aluminum cans and plastic bottles are managed in this area.

Date of Start-Up: February, 1990

Date of Closure: Still active

Waste Managed: Aluminum cans; plastic milk and soda bottles

Release Controls: None observed

History of Release: No evidence or history of releases

References: 24,27

V. AREAS OF CONCERN (AOC's)

In addition to the 27 SWMU's discussed in the previous section, 3 AOC's were identified during the RFA site visit and are listed below.

1. Storm Water System
2. Sewer System
3. Abandoned Underground Storage Tanks

The duPont Chestnut Run facility is graded to control surface water run-off. Surface water run-off from the facility should normally drain to the on-site storm water collection system (AOC #1). The storm water mixes with steam and humidity condensate, non-contact cooling water, and other non-regulated activity. These systems discharge to either Willow Run via NPDES discharge permit number DE0000566 - outfall 002 or to the Chestnut Run Branch via NPDES discharge permit 001 and/or 003. Chestnut Run performs a variety of analytical testing at these outfalls, including BOD, TSS, pH, temperature, bioassay, chronic and toxic compounds.^{1,2,6,7,24}

The site also discharges sanitary waste, lab waste, process waste water, boiling and cooling tower water to the sewer system (AOC #2). duPont Chestnut Run discharges these wastes through a New Castle County Sanitary Sewer Permit with discharge points identified as 010CTC and 011 main. Building 702, Building 708, and 717 all monitor pH of the waste water. Discharges are sampled quarterly for metals, pH, TSS, NH₃, BOD, cyanide and phenolics.^{6,24,25}

The concern with the Sanitary Sewer System is the possibility of thirty year old, decaying or fractured underground pipings systems leaking untreated waste water into the ground and/or ground water.

The facility should verify the integrity of the underground sanitary waste piping system.

The facility has four abandoned underground storage tanks (AOC #3) that were installed sometime in 1954. Building 704 abandoned underground storage tank was used to store #2 fuel oil. The tank was emptied, filled with sand and abandoned in place in 1957.^{24,27,29}

On the west side of Building 712 is a 13,000 gallon abandoned underground storage tank used to store #6 fuel oil. It was installed in 1954 and emptied and abandoned in place in 1957.^{24,27}

Building 713 has two 20,000 gallon underground storage tanks that were also installed in 1954. Both tanks were used to store #6 fuel oil. The tanks were emptied and abandoned in place in 1957.^{24,27}

The material of construction for the four underground storage tanks is unknown.

VI. CONCLUSIONS/RECOMMENDATIONS

This section represents the conclusions and suggested further actions for the SWMU's and AOC's during the PR and VSI of the duPont Chestnut Run facility. Twenty-seven SWMU's and three AOC's were identified while conducting the RFA.

For each SWMU, the potential for release to soil, ground water, surface water, air and from the generation of subsurface gas is assessed. For the purposes of this report, a low or no release potential was assigned in cases where the units are located inside buildings, are in good condition, have appropriate release controls, or do not manage hazardous waste or waste containing hazardous constituents. A moderate release potential was assigned in cases where there may be a release during certain operational periods or depending on the volume of material handled at a given time. A high potential for release is assigned for cases where there was documented contamination, visual evidence of release, or where the design/operation of the unit was determined to allow releases to one or more environmental media.

1. UNIT NAME: RCRA Permitted Hazardous Waste Pad

Conclusions

Soil/Ground Water: The potential for release to soils and ground water is low due to the secondary containment provided and waste management practices at the unit.

Surface Water: Though the unit is located within 50 feet, upgradient, of the Chestnut Run Branch, the potential for surface water release is low due to the secondary containment provided and waste management practices at the unit.

Air: The potential for release to air is low due to closed-topped management of containers at the unit.

Subsurface Gas: There is a low potential for the generation of subsurface gas due to the above ground management of closed-topped containers which are stored on a concrete pad with adequate secondary containment.

Suggested Further Action:

It is suggested that the facility continue compliance with RCRA requirements.

2. UNIT NAME: RCRA Interim Status Hazardous Waste Storage Area

Conclusions

Soil/Groundwater: The potential for release to soils and ground water is low due to secondary containment provided and that the unit no longer manages waste.

Surface Water: The potential for release to surface water is low due to the inactive status of the unit.

Air: The potential for release to air is low due to the inactive status of the unit.

Subsurface Gas: There is low potential for the generation/migration of subsurface gas due to the release controls provided.

Suggested Further Action: Rinsate and soil samples showed no contamination. A Professional Engineer certified the closure and this certification is currently under review with DNREC. No additional action is suggested at this time.

3. UNIT NAME: Non-Hazardous Waste Storage Area - Building 702

Conclusions

Soil/Ground water: The potential for release to soils and ground water is low due to the release controls (cement pad, concrete diking, and roof) and the waste management practices at the unit.

Surface Water: The potential for release to surface waters is low due to the release controls at the unit.

Air: The potential for release to air is low due to closed-topped management of containers at the unit.

Subsurface Gas: There is a low potential for the generation of subsurface gas due to the release controls of the unit and the above ground management of containers at the unit.

Suggested Further Action:

No further action is suggested at this time.

4. UNIT NAME: 90-Day Hazardous Waste Accumulation Area - Building 708

Conclusions

Soil/Ground Water:

The potential for release to soils and ground water is low due to the release controls present at the unit.

Surface Water:

The potential for release to surface water is low due to the secondary containment provided and waste management practices at the unit.

Air:

The potential for release to air is low due to closed-top management of containers at the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the above-ground management of closed-topped containers which are stored on a concrete pad with adequate secondary containment.

Suggested Further Action:

No further action is suggested at this time.

5. UNIT NAME: 90 Day Hazardous Waste Accumulation Area - Building 709

CONCLUSIONS

Soil/Ground Water:

The potential for release to soil and ground water is low due to the concrete floor of the unit, the asphalted area adjacent to the dock, and waste management practices at the unit.

Surface Water:

The potential for release to surface water is low due to the release controls and waste management practices at the unit.

Air:

The potential for release to air is low due to closed-topped management of containers at the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the above-ground management of closed-topped containers which are stored on an elevated concrete pad.

Suggested Further Action:

No further action is suggested at this time.

6. UNIT NAME: Test Equipment Storage pad - Building 709

Conclusions

Soil/Ground Water:

The potential for release to soils and groundwater is low due to the waste management practices at the unit.

Surface Water:

The potential for release to surface water is low due to the elevated cement pad and the waste management practices of the unit.

Air:

The potential for release to air is low due to closed-topped management of containers at the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the above-ground management of closed-top containers which are stored on a concrete pad.

Suggested Further Action:

The facility should consider adequate secondary containment for this unit. No further action at this time under RCRA.

7. UNIT NAME: 90 Day Hazardous Waste Accumulation Area - Building 711(E)

Conclusions

Soil/Ground Water:

The potential for a release to soils and ground water is low due to the secondary containment/release controls provided and the waste management practices at the unit.

Surface Water:

The potential for release to surface water is low due to the secondary containment/release controls provided and the waste management practices at the unit.

Air:

The potential for release to air is low due to closed-top management of containers at the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the above-ground management of closed-topped containers which are stored on a concrete pad with adequate secondary containment.

Suggested Further Action:

Due to the presence of standing liquid located in the secondary containment sump, the facility should verify the integrity of the unit. If the integrity of the sump has been impaired, soil sampling may be warranted to determine if hazardous constituents have been released. Soil samples should be obtained from these areas where the unit is impaired. The analytical parameters of concern include priority pollutant metals, priority pollutant volatiles, semi-volatiles/AB & N Extractable Compounds and Total Petroleum Hydrocarbons (TPH). Based on the results, ground water monitoring may be warranted.

8. UNIT NAME: 90-Day Hazardous Waste Accumulation Area - Building 711(F)

Conclusions

Soil/Ground Water:

The potential for release to soils and ground water is low due to the secondary containment/release controls provided and waste management practices at the unit.

Surface Water:

The potential for release to surface water is low due to the secondary containment/release controls provided and waste management practices at the unit.

Air:

The potential for release to air is low due to closed-topped management of containers at the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the above-ground management of closed-topped containers which are stored on a concrete pad with adequate secondary containment.

Suggested Further Action:

No additional action is suggested at this time.

9. UNIT NAME: Crawlspace - Building 711E

Conclusions

Soil/Ground Water: Release to the soils under Building 711(E) have been confined. The potential for ground water contamination is low due to the removal of contaminated soil and encapsulation in cement.

Surface Water:

The potential for release to surface water is low due to the contamination being confined under Building 711(E).

Air:

There is no potential for release to the air due to encapsulation in cement. However, releases may have occurred in the past due to the nature of waste that was present prior to removal.

Subsurface Gas:

Potential for the generation of subsurface gas is indeterminate, based on unknown quantities of waste containing volatiles and biodegradable material present under the cemented unit.

Suggested Further Action:

Four soil borings have been performed around the perimeter of Building 711(E) to determine if the oil has migrated. At the time of the report, the analytical data from the four soil borings has not been received. Based on the results, ground water monitoring may be warranted.

10. UNIT NAME: 90 Day Hazardous Waste Accumulation Area - Building 712

Conclusions

Soil/Ground Water:

The potential for release to soils and ground water is low due to the location of the unit inside concrete buildings.

Surface Water:

The potential for release to surface water is low due to the location inside Building 712, secondary containment provided, and waste management practices at the unit.

Air:

The potential for release to the air is low due to closed-topped management of containers at the unit.

Subsurface Gas:

There is no potential for generation/migration of subsurface gas due to the management of waste in an enclosed building over a concreted floor.

Suggested Further Action:

No further action is suggested at this time.

11. UNIT NAME: Non-Hazardous Waste Oil Storage Area

Conclusions

Soil/Ground Water:

The potential for release to soils is moderate due to the construction of the unit. The unit's concrete floor is raised four feet above the level of the paved parking area with a gutter that slopes toward this parking area. A release in the unit could migrate down the gutter and across the parking lot to the adjacent grassy area. The potential for a release to ground water is low due to the amount of waste managed at the unit.

Surface Water:

The potential for release to surface water is moderate to high due to the possibility of a release migrating down the gutter onto the parking lot and into a storm water collection system that discharges to the Chestnut Run stream.

Air:

The potential for release to air is low due to closed-topped management of containers at the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the nature and quantities of the waste managed at the unit.

Suggested Further Action:

The facility should consider providing adequate secondary containment for this unit. No further action is suggested at this time under RCRA.

12. UNIT NAME: Non-Hazardous Waste Storage Area - Building 714

Conclusions

Soil/Ground Water:

The potential for a release to soils or ground water is low due to the secondary containment/release controls provided, and waste management practices at the unit.

Surface Water:

The potential for a release to surface water is low due to secondary containment/release controls provided, and waste management practices at the unit.

Air:

The potential for release to air is low due to closed-topped management of containers at the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the above-ground management of closed-topped containers which are stored on a concrete pad with adequate secondary containment.

Suggested Further Action:

No further action is suggested at this time.

13. UNIT NAME: 90-Day Hazardous Waste Accumulation Area - Building 715

Conclusions

Soil/Ground Water:

The potential for release to soil/ground water is low due to the inactive status of the unit.

Surface Water:

The potential for release to surface water is low due to the inactive status of the unit.

Air:

The potential for a release to air, at the present time, is low due to the inactive status of the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the past above-ground management of closed-topped containers which were stored on a concrete pad.

Suggested Further Action:

If and when the unit is re-activated, the facility should consider implementing a secondary containment system. No further action is suggested at this time under RCRA.

14. UNIT NAME: Underground Pipe Between Fuel Storage Tank and the Power House

Conclusions

Soils/Ground Water:

Release to soils have been confirmed at this unit. The potential for release to ground water is low due to the contaminated soil being excavated.

Surface Water:

The potential for a release to surface water is low due to the leak occurring underground and contaminated soils were removed.

Air:

The potential for release to the air, at present, is low. However, releases most likely occurred when excavating the contaminated soil.

Subsurface Gas:

There is a low potential for the generation of subsurface gas, due to the removal of the contaminated soil.

Suggested Further Action:

The facility should consider placing the underground line above-ground in order to immediately observe a release and/or implement secondary containment. No further action is suggested at this time under RCRA.

15. UNIT NAME: Polyester Resin Cooling Dock and Refuse Dumpster

Conclusions

Soil/Ground Water:

No potential for release to soil or ground water exists due to the nature of the waste.

Surface Water:

No potential for release to surface water exists due to the nature of the waste.

Air:

The potential for release to air is low to moderate due to open-topped containers used to cool the resin outside on the loading dock.

Subsurface Gas:

There is no potential for subsurface gas production due to the nature of the waste managed.

Suggested Further Action:

Due to the waste being cooled in open-topped containers, the facility should investigate the possibility of using closed-topped containers. No further action is suggested at this time under RCRA.

16. UNIT NAME: Non-Hazardous Waste Storage Area

Conclusion

Soil/Ground Water:

The potential for release to soil and ground water is low due to the nature of the waste and the asphalt paved area.

Surface Water:

The potential for release to surface water is low due to the nature of the waste, containers utilized and the asphalted unit.

Air:

There is no potential for release to air due to the nature of the waste.

Subsurface Gas:

There is no potential for subsurface gas production due to the nature of the waste and the above-ground management practices.

Suggested Further Action:

No further action is suggested at this time.

17. UNIT NAME: Satellite Accumulation Area - Building 717

Conclusion

Soil/Ground Water:

The potential for release to soils and ground water is low due to the release controls and waste management practices at the unit.

Surface Water:

The potential for release to surface waters is low due to release controls and waste management practices at the unit.

Air:

The potential for release to air is low due to closed-topped management of containers at the unit.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the above-ground management of closed-topped containers which are stored on a concrete pad with adequate release controls.

Suggested Further Action:

No further action is suggested at this time.

18. UNIT NAME: Saw Dust Collection Systems

Conclusions

Soil/Ground Water:

The potential for release to soils and ground water is low due to the nature of the waste and waste management practices at the unit.

Surface Water:

The potential for release to surface water is low due to the closed management of containers and waste management practices.

Air:

The potential for release to air is low due to the closed collection system at the units.

Subsurface Gas:

There is low potential for the generation of subsurface gas due to the above-ground management of closed-topped containers which are stored above-ground.

Suggested Further Action:

No further action is suggested at this time.

19. UNIT NAME: Satellite Accumulation Area - Building 708

Conclusions

Soil/Ground Water:

There is no potential for release to soil and ground water due to the location of the unit inside an enclosed building with concrete floors.

Surface Water:

There is no potential for release to surface water due to the location of the unit inside an enclosed building with concrete floors.

Air:

The potential for release to air is low due to the closed-topped management of containers at the unit.

Subsurface Gas:

There is no potential for the generation/migration of subsurface gas due to management of waste in an enclosed building over concrete floors.

Suggested Further Action:

No further action is suggested at this time.

20. UNIT NAME: Carbon Black Dust Collection System

Conclusions

Soil/Ground Water:

The potential for release to soils and ground water is low due to the release controls and the waste management practices at the unit.

Surface Water:

The potential for release to surface water is low due to the nature of the waste and the waste management practices at the unit.

Air:

The potential for release to the air is low due to the enclosed collection unit.

Subsurface Gas:

There is no potential for the generation/migration of subsurface gas due to the nature of the waste and the management of the above-ground collection unit.

Suggested Further Action:

No further action is suggested at this time.

21. UNIT NAME: Process Polymer Waste Dumpsters

Conclusions

Soil/Ground Water:

The potential for release to soil and ground water is low due to the nature of the waste and the release controls provided at the unit.

Surface Water:

The potential for release to surface water is low due to the nature of the waste and the waste management practices at the unit.

Air:

The potential for release to air is low due to the nature of the waste.

Subsurface Gas:

There is a low potential for the generation/migration of subsurface gas due to the management of waste containers that are stored on an asphalted pad.

Suggested Further Action:

It is suggested that the facility contact the Delaware Solid Waste Authority (DSWA) and DNREC's Solid Waste Management Branch to obtain their permission to dispose of the process polymer waste (an industrial waste) in a DSWA landfill. No further action is suggested at this time under RCRA.

22. UNIT NAME: Scrap Metal Storage Area

Conclusions

Soil/Ground Water:

The potential for release to soil is moderate since many large pieces of scrap metal are stored on the asphalt area and storm water run-off may migrate to the surrounding grassy tract. The potential for ground water contamination is low due to the nature of the waste.

Surface Water:

The potential for release to surface water is high due to the closed proximity (approximately 75 feet) from Chestnut Run along with the management of scrap metal in open dumpsters and being placed directly on the asphalted area.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the nature of the waste.

Suggested Further Action:

The facility should consider storing such waste in an area that is adequately protected from storm water run-off. No further action is suggested at this time under RCRA.

23. UNIT NAME: Scrap Metal Dumpster

Conclusions

Soil/Ground Water:

The potential for release to soil is moderate due to the open-top construction of the dumpster and the deteriorated state of the dumpster. Storm water would, most likely, pass through the scrap metal, exit the dumpster, and migrate across the asphalted area to the adjacent grassy tract. The potential for release to ground water is low due to the nature of the waste.

Surface Water:

The potential for release to surface water is high due to the open-top construction of the dumpster. Storm water would most likely pass through the dumpster and migrate across the asphalt area to the adjacent grassy area, which is sloped toward the Chestnut Run stream (approximately 75 feet away).

Air:

The potential for release to air is low due to the nature of the waste.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the nature of the waste.

Suggested Further Action:

The facility should consider covering the dumpster with a tarp to impede storm water infiltration. No further action is suggested, under RCRA, at this time.

24. UNIT NAME: Asbestos Dumpster

Conclusions

Soil/Ground Water:

The potential for release to soil and ground water is low due to the closed-topped management of the dumpster.

Surface Water:

The potential for release to surface water is moderate due to the unit's proximity to the Chestnut Run stream (approximately 75 feet down-gradient of the dumpster).

Air:

The potential for release to air is low due to the closed-topped management of the dumpster.

Subsurface Gas:

There is a low potential for the generation of subsurface gas due to the above-ground management of the closed-topped dumpster.

Suggested Further Action:

No further action is suggested at this time.

25. UNIT NAME: Refuse Dumpsters

Conclusions

Soil/Ground Water:

The 41 refuse dumpsters, located throughout the facility, have a low potential for release to soil and ground water due to the nature of the waste and waste management practices.

Surface Water:

There is a low potential for release to surface water due to the nature of the waste and waste management practices.

Air:

There is a low potential for release to air due to the nature of the waste.

Subsurface Gas:

There is a low potential for the generation/migration of subsurface gas due to the above-ground management of the units.

Suggested Further Action:

No further action is suggested at this time.

26. UNIT NAME: White Paper Recycling Dumpsters

Conclusions

Soil/Ground Water:

There is a low potential for release to soil and ground water due to the nature of the waste and the waste management practices at these units.

Surface Water:

There is a low potential for release to surface water due to the waste management practices at these units.

Air:

There is no potential for release to air due to the nature of the waste.

Subsurface Gas:

The potential for the generation of subsurface gas is low due to the above-ground management of the units.

Suggested Further Action:

No further action is suggested at this time.

27. UNIT NAME: Aluminum Can/Plastic Bottle Recycling Bins

Conclusions

Soil/Ground Water:

There is no potential for a release to soil and ground water due to the nature of the waste and the waste management practices at the units.

Surface Water:

There is no potential for release to surface water due to the waste management practices at these units.

Air:

There is no potential for release to air due to the nature of the waste managed at the units.

Subsurface Gas:

There is no potential for the generation of subsurface gas due to the nature of the waste and the above-ground management at the units.

Suggested Further Action:

No further action is suggested at this time.

Facility-Wide Conclusion

Based on the findings of this study, DE DNREC does not recommend, at this time, conducting a facility-wide RCRA Facility Investigation (RFI). Twenty-five out of the twenty-seven SWMU's identified were determined to not be an environmental threat at this time. Therefore, a recommendation of "No further action" is recommended at this time.

The two units that did receive suggested further actions were unit #7 - 90 Day Hazardous Waste Accumulation Area - Building 711(E) and unit #9 - Crawl Space - Building 711(E).

Due to the presence of standing liquid in the secondary containment sump and dark stains on the grating system of unit #7, the facility should verify the integrity of the unit. If the integrity of the unit has been impaired, soil and ground water samples may be warranted to determine the presence of a release.

Unit #9 released milling oils to the soils under Building 711(E). Four soil borings/samples were executed surrounding the building to assess the possibility of oil migrating beyond the vicinity of the release. At the time of this report, the analytical data from the boring samples have not been received. Based on those results, ground water monitoring may be warranted.

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APPENDIX A

VISUAL SITE INSPECTION SUMMARY

AND

PHOTO LOG

The Visual Site Inspection (VSI) summary and accompanying photo log document the activities and observations of representatives of the State of Delaware DNREC and the US EPA during the July 17, 1991 VSI of E.I. duPont Chestnut Run. Findings from this VSI have been incorporated into the main body of this report and provide a basis for the recommendations for further actions.

VSI Summary: The VSI of duPont Chestnut Run began at 0910 on July 17, 1991. The weather for the day was sunny and warm, with temperature in the low nineties. Representatives from DE DNREC, EPA Region III, and duPont were present for the VSI. The sign-in sheet for those participating in the VSI is provided as Attachment 1.

The VSI commenced with an introductory discussion of the facility, purpose of the VSI, and of the day's agenda.

Following the introductory session, the VSI participants proceeded with the actual walk-through. The VSI was performed by a circular (counter-clock wise) sweep of the facility, starting at SWMU #1. The facility representatives explained each SWMU as it was inspected and provided supplemental information when queried. The inspector noted any units or areas that were not identified in the facility's SWMU report, asked the facility representative for information concerning these units, and made a preliminary determination on the regulatory status (e.i. SWMU, AOC, etc.) of each unit. Photographs were taken for every SWMU, except SWMU #19 due to the facility claiming business confidentiality in the area of the SWMU. Photo Ionization Detection (PID) was taken at each location. Throughout the VSI, no readings above the background levels were measured by the PID.

Following the walk-through, the participants met for a closing discussion. The DNREC and EPA representatives informed the facility representatives of the additional SWMU's and AOC's identified during the VSI. The concluding meeting ended at 1700 hours.

Equipment List: The following equipment/instrumentation was utilized by DNREC and EPA representatives during the VSI:

- Photo Ionization Detector - Thermo Environmental Instruments, Inc.,
Model 580S OVM
- 35 mm Camera (Olympus Infinity Zoom 200)
- 2 rolls of Kodak Gold 400 Film (36 exposure)
- Facility maps

Photo Log: The photographs on the following pages provide visual documentation of observations made during the VSI. The back of each original (which was developed in duplicate) has the facility name, VSI date, brief description/SWMU # and the signature of the photographer.

DNREC/EPA VISUAL SITE INSPECTION
RCRA FACILITY ASSESSMENT
DUPONT CHESTNUT RUN
JULY 18, 1991

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Bob Beardsley	E.I. duPont	(302) 999-3512
Jennifer D. The'	E.I. duPont	(302) 366-6269

TABLE 1

PHOTO LOG

<u>Photo #</u>	<u>SWMU #</u>	<u>Unit Name</u>
1	1	RCRA Permitted Hazardous Waste Pad
2	2	RCRA Interim Status Hazardous Waste Storage Area
3	3	Non-Hazardous Waste Storage Area-Bldg. 702
4	4	90-Day Hazardous Waste Accumulation Area-Bldg. 708
5	5 & 25	90-Day Hazardous Waste Accumulation Area-Bldg. 709 Refuse Dumpster
6	6	Test Equipment Storage Pad-Building 709
7	7	90-Day Hazardous Waste Accumulation Area-Bldg. 711(E)
8	7	90-Day Hazardous Waste Accumulation Area-Bldg. 711(E)
9	8	90-Day Hazardous Waste Accumulation Area-Bldg. 711(F)
10	9	Crawl Space-Building 711(E)
11	9	Crawl Space-Building 711(E)
12	9	Crawl Space-Building 711(E)
13	10	90-Day Hazardous Waste Accumulation Area-Bldg. 712
14	10	90-Day Hazardous Waste Accumulation Area-Bldg. 712
15	11	Non-Hazardous Waste Oil Storage Area-Building 713
16	12	Non-Hazardous Waste Storage Area-Building 714
17	13	90-Day Hazardous Waste Accumulation Area-Building 715
18	14	Underground Pipe Between Fuel Storage Tank & Power House
19	15	Polyester Resin Cooling Dock and Refuse Dumpster
20	16	Non-Hazardous Waste Storage Area
21	16	Non-Hazardous Waste Storage Area
22	17	Satellite Accumulation Area-Building 717
23	18	Saw Dust Collection System-Building 717-North Side
24	18	Saw Dust Collection System-Building 713
25	18	Saw Dust Collection System-Building 717-South Side
26	18	Saw Dust Collection System-Building 711
27	20	Carbon Black Dust Collection Unit
28	21 & 25	Process Polymer Waste Dumpsters Refuse Dumpster
29	21	Process Polymer Waste Dumpsters
30	22	Scrap Metal Storage Area
31	22	Scrap Metal Storage Area-North Side
32	23 & 24	Scrap Metal Dumpster-Left of Photo Asbestos Dumpster-Right of Photo
33	25	Refuse Dumpster
34	25	Refuse Dumpster
35	25	Refuse Dumpster
36	26	White Paper Recycling Dumpsters
37	27	Aluminum Can/Plastic Bottle Recycling Bins

<u>PHOTO #</u>	<u>AOC #</u>	<u>UNIT NAME</u>
38	3	Abandoned Underground Storage Tanks (Location)
39	3	Abandoned Underground Storage Tanks (Location)

BBC:mlk
BBC91013

PHOTO
1

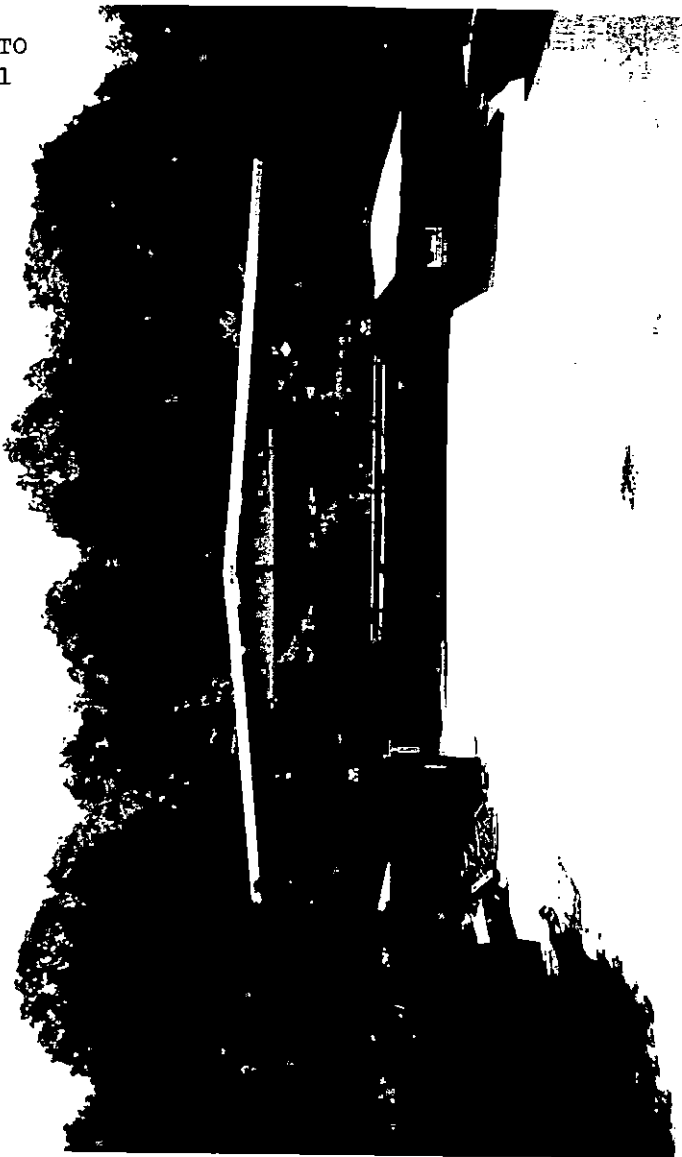


PHOTO
2

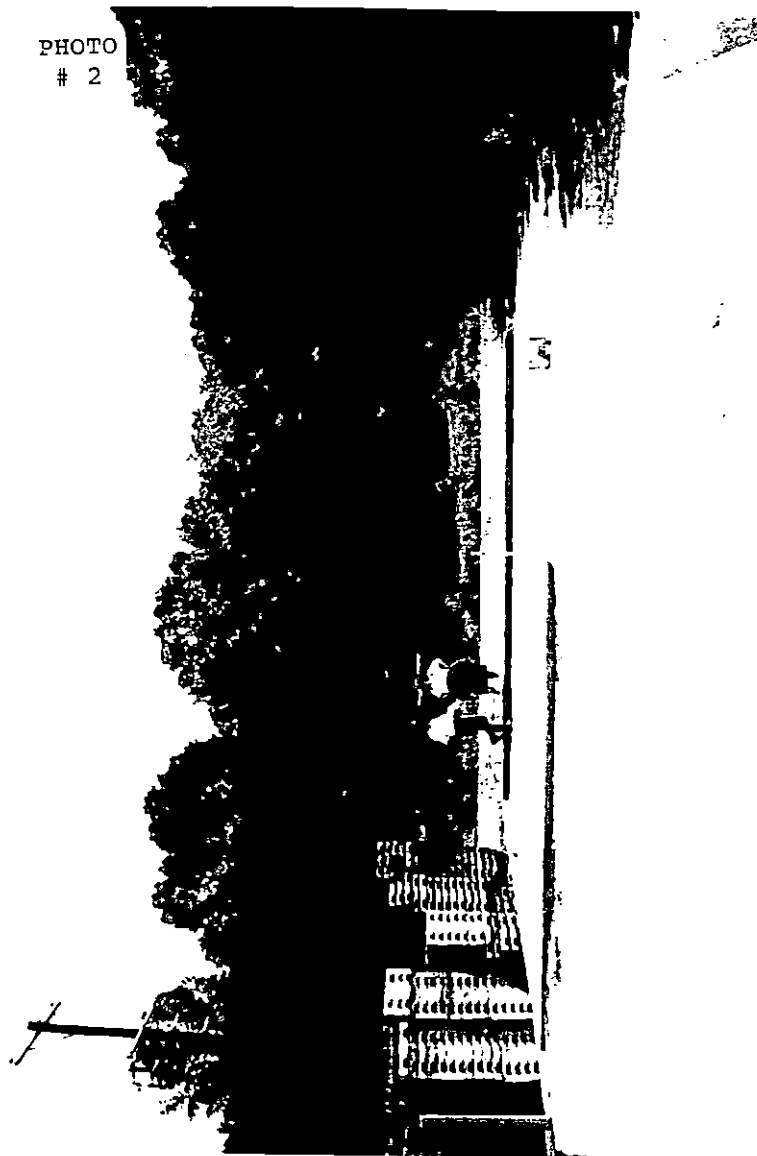


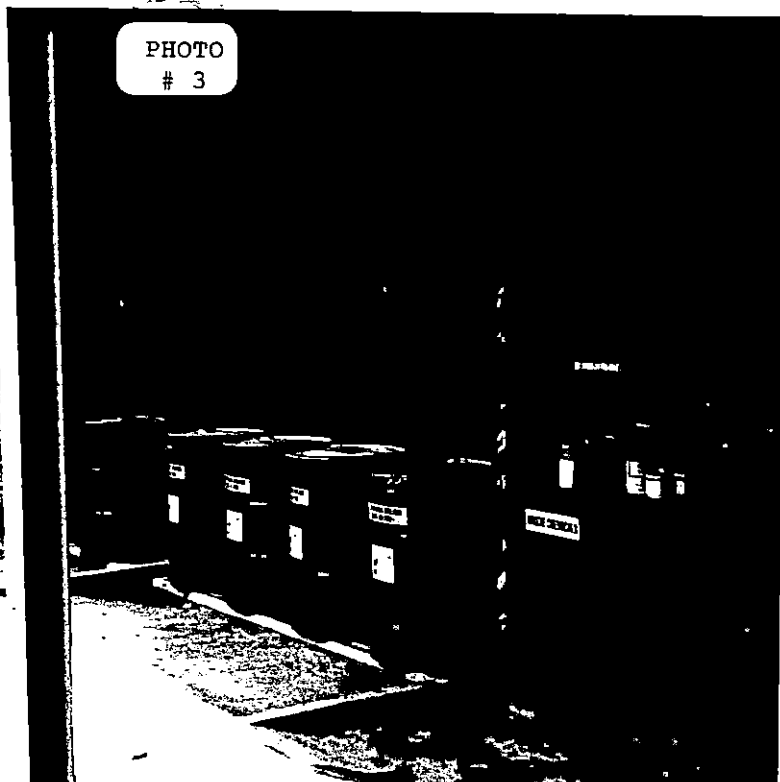
PHOTO #1 - SWMU #1

PHOTO #2 - SWMU #2

PHOTO #3 - SWMU #3



PHOTO
3



Dupont Chestnut Run

7/17/91

Sumu # 1 (Roofed Structure)

Alan Simpson

Photo # 1

Dupont - Chestnut Run

7/17/91

Sumu # 2

Alan Simpson

Dupont - Chestnut Run
7/17/91

Non-Hazardous Waste Storage Area - Building 702

Sumu # 3

Alan Simpson

Photo # 3

PHOTO
4



PHOTO
5



PHOTO
6

PHOTO #4 - SWMU #4

PHOTO #5 - SWMU#5 &
25

PHOTO #6 - SWMU #6



Dupont - Chestnut Run -
7/17/91

90-day Hazardous Waste Accumulation
Area - Building 708

SWMU # 4

Alan Simpson

Dupont Chestnut Run

7/17/91

90 day Hazardous Waste Accumulation
Area - Building 709

SWMU # 5

Hazardous Waste Accumulation
Area - Building 709

SWMU # 25

Dupont - Chestnut Run
7/17/91

Temporary Waste Storage Pad
SWMU # 6
Alan Simpson

PHOTO
7



PHOTO
8



PHOTO
9



PHOTO #7 - SWMU #7

PHOTO #8 - SWMU #7

PHOTO #9 - SWMU #8

Dupont - Chestnut Run
7/17/91

90-Day Hazardous Waste Accumulation Area
Building 711 (E)

Sum # 7
Alan Jensen

Dupont - Chestnut Run

90-Day Hazardous Waste Accumulation Area
Building 711 (E)

Sum # 7
Alan Jensen

Dupont Chestnut Run
7/17/91

90-day Hazardous Waste Accumulation Area
Building 711 F

Sum # 8
Alan Jensen

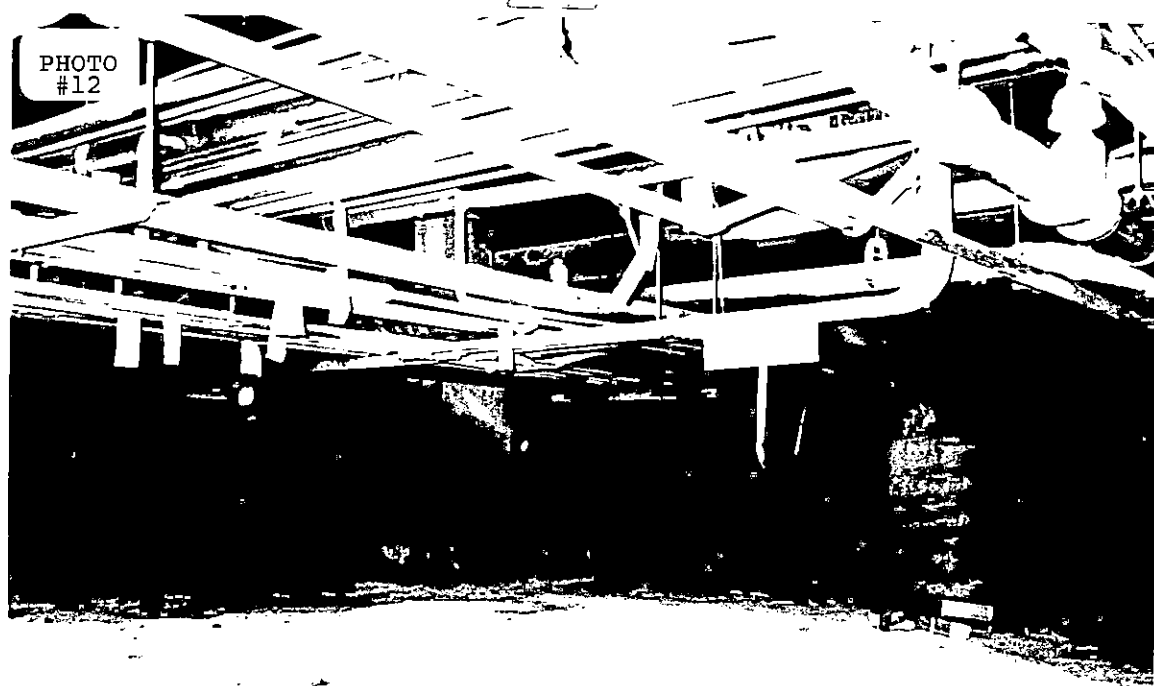
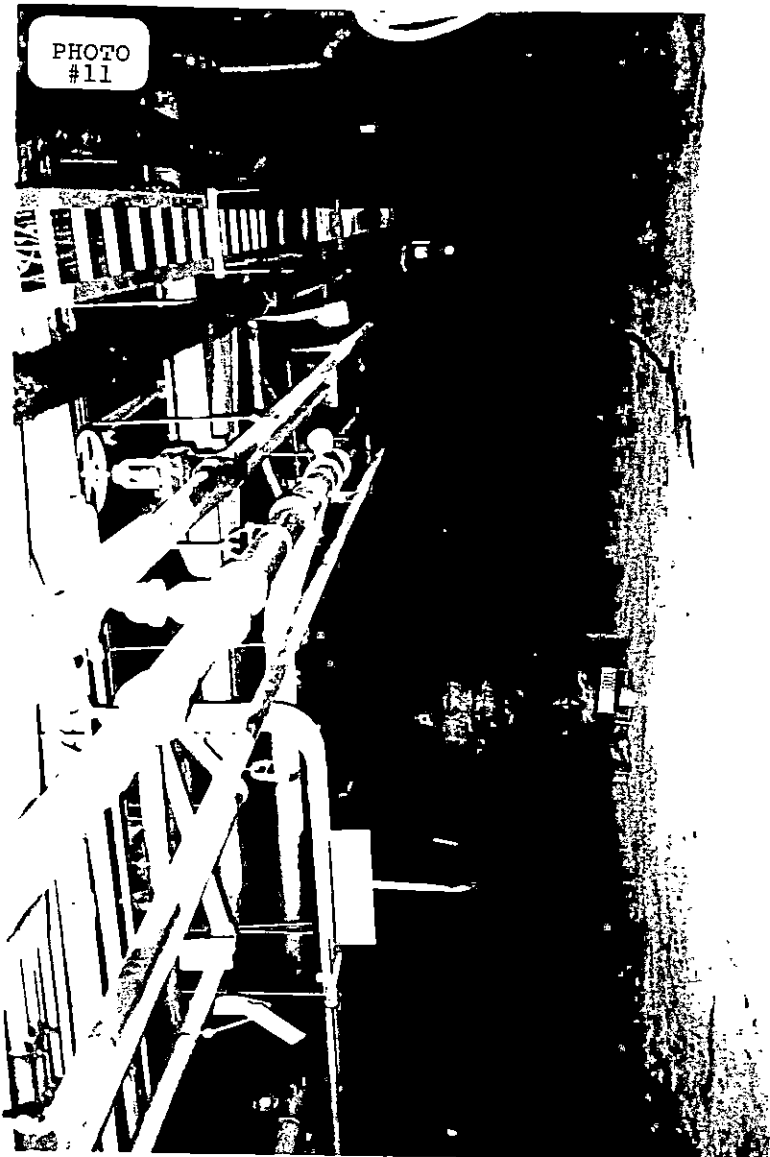


PHOTO #10 - SWMU #9

PHOTO #11 - SWMU #9

PHOTO #12 - SWMU #9

Dupont Chestnut Run

7/17/91

Crawl Space under Building 711

(note: dirt floor has been cemented)

Swim # 9

Alan Simpson

Dupont Chestnut Run

7/17/91

Crawl Space under Building 711

(note - dirt floor has been cemented)

Swim # 9

Alan Simpson

Dupont Chestnut Run

7/17/91

Crawl Space under Building 711

(note: dirt floor has been cemented)

Swim # 9:

Alan Simpson

PHOTO
#13



PHOTO
#14

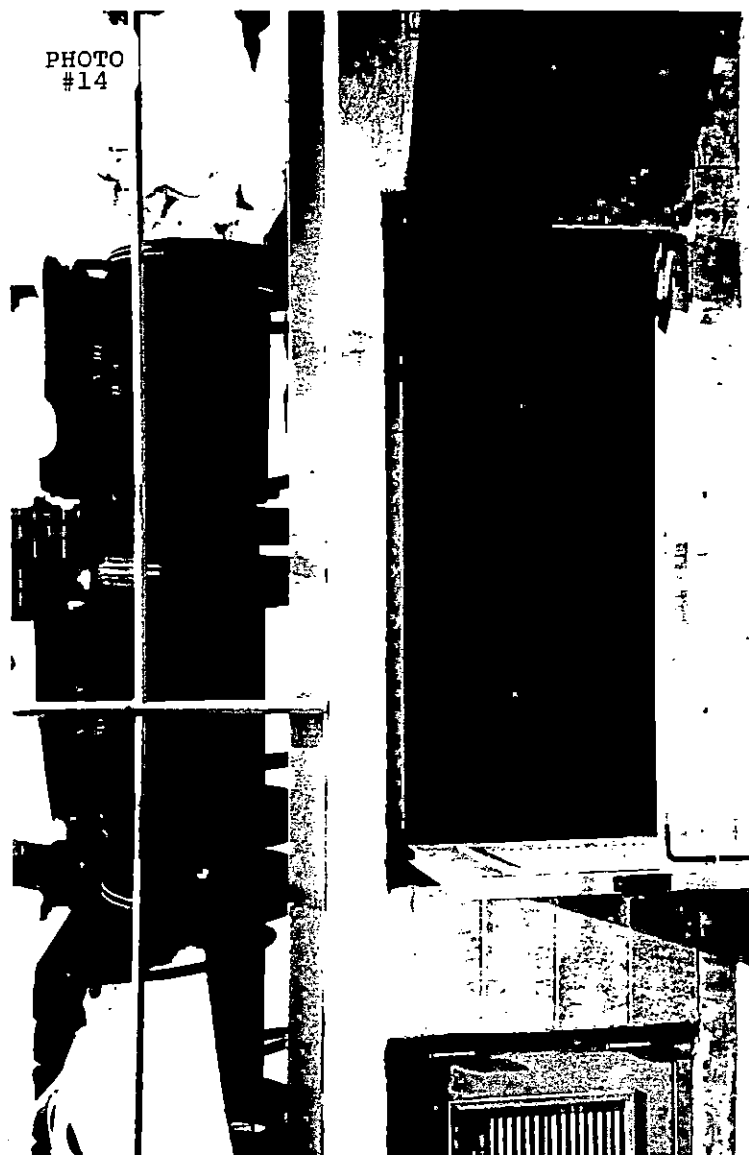
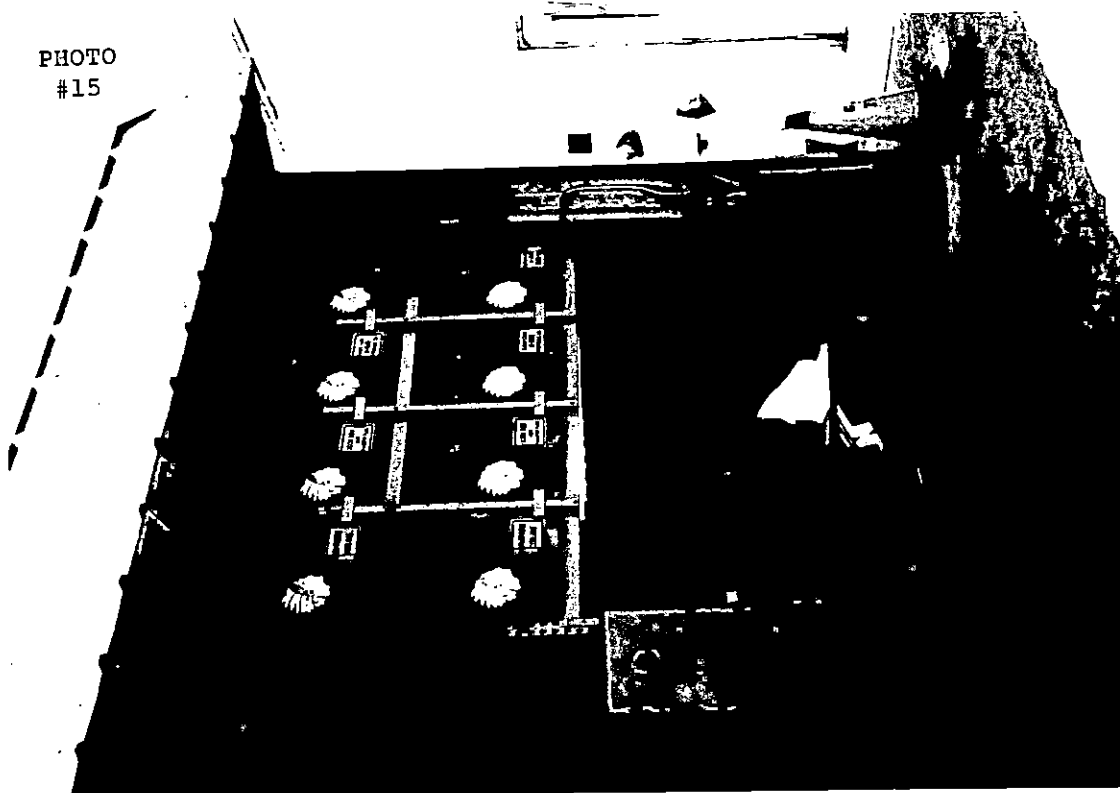


PHOTO
#15

PHOTO #13 - SWMU #10

PHOTO #14 - SWMU #10

PHOTO #15 - SWMU #11



Dupont- Chestnut R.

7/17/91

90-day Hazardous Waste Accumulation Area

Sum # 10

Alan Johnson

Dupont Chestnut Run

7/17/91

90-Day Hazardous Waste Accumulation Area

Secondary Containment- 55 gallon drums.

Part of Sum # 10

Alan Johnson

Dupont- Chestnut Run

7/17/91

Non-Hazardous waste oil
Storage area.

Building 713

Sum # 11

Alan Johnson

PHOTO
#16



PHOTO
#17

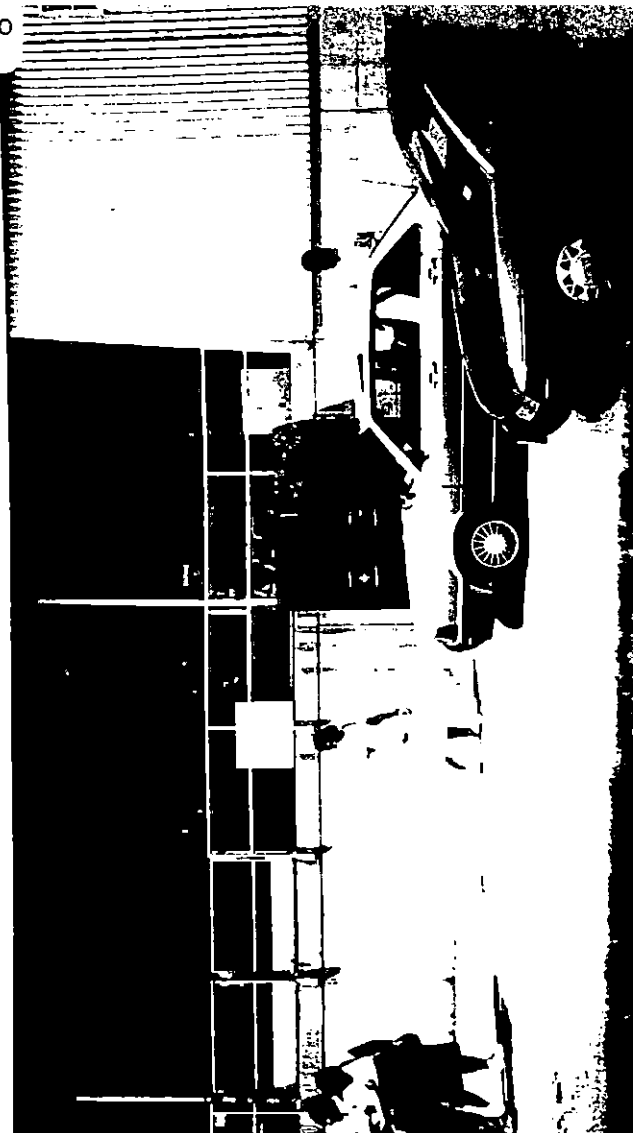


PHOTO
#18

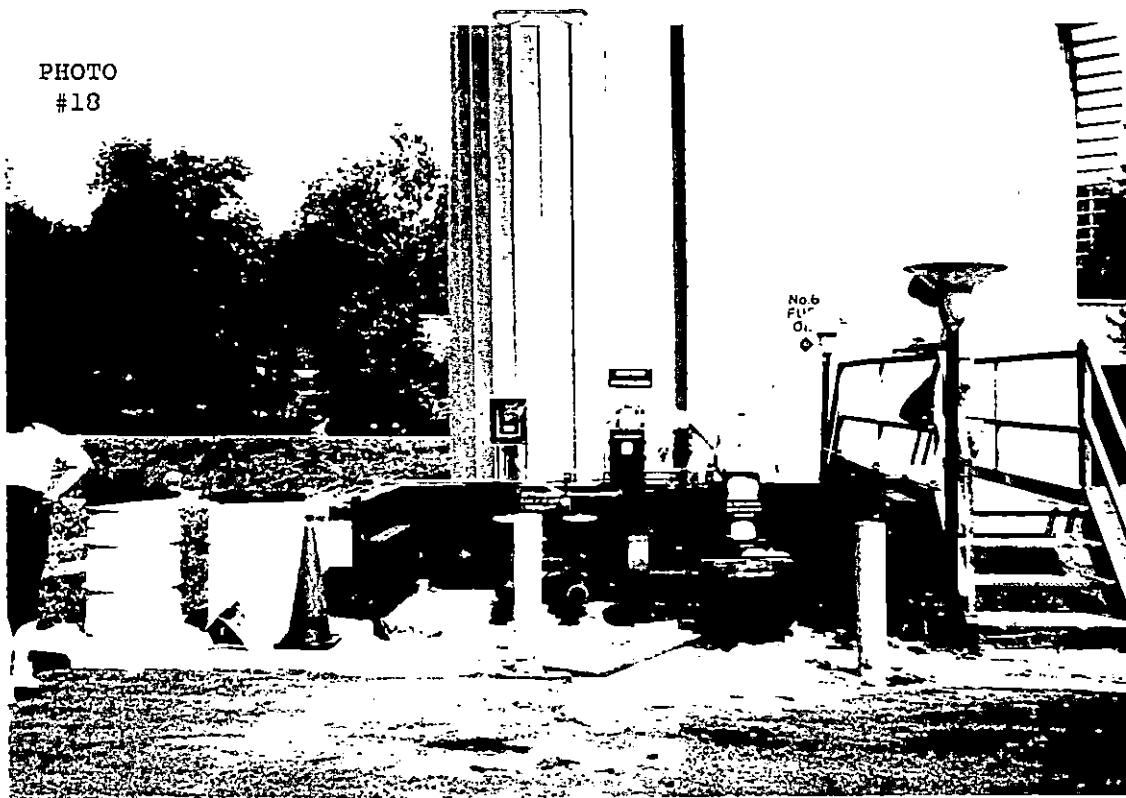


PHOTO #16 - SWMU #12

PHOTO #17 - SWMU #13

PHOTO #18 - SWMU #14

Dupont - SUMU # 12
7/17/91

Non-Hazardous Waste Storage Area - Building 714

SUMU # 12

Alan Simpson

Dupont Chestnut Run

7/17/91

Former 90-Day Hazardous Waste Accumulation Area
Building 715

SUMU # 13

Alan Simpson

Dupont Chestnut Run
7/17/91

250,000 Fuel oil Tank & Fuel Truck
off loading area.

Part of SUMU # 14

Alan Simpson

PHOTO
#19



PHOTO
#20

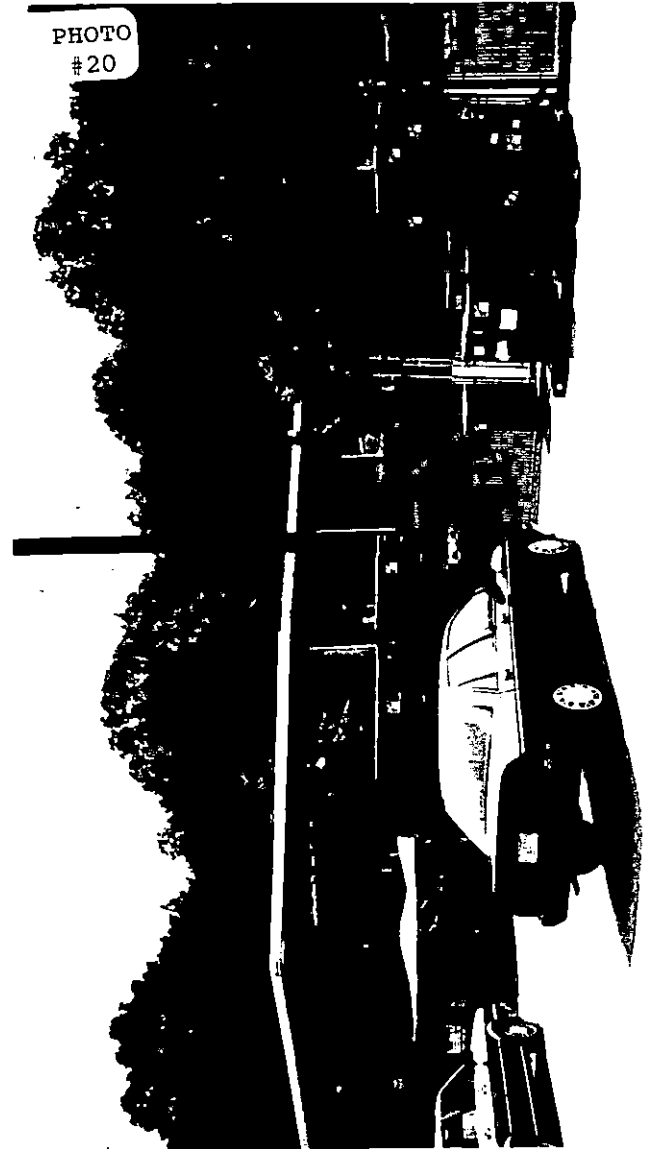
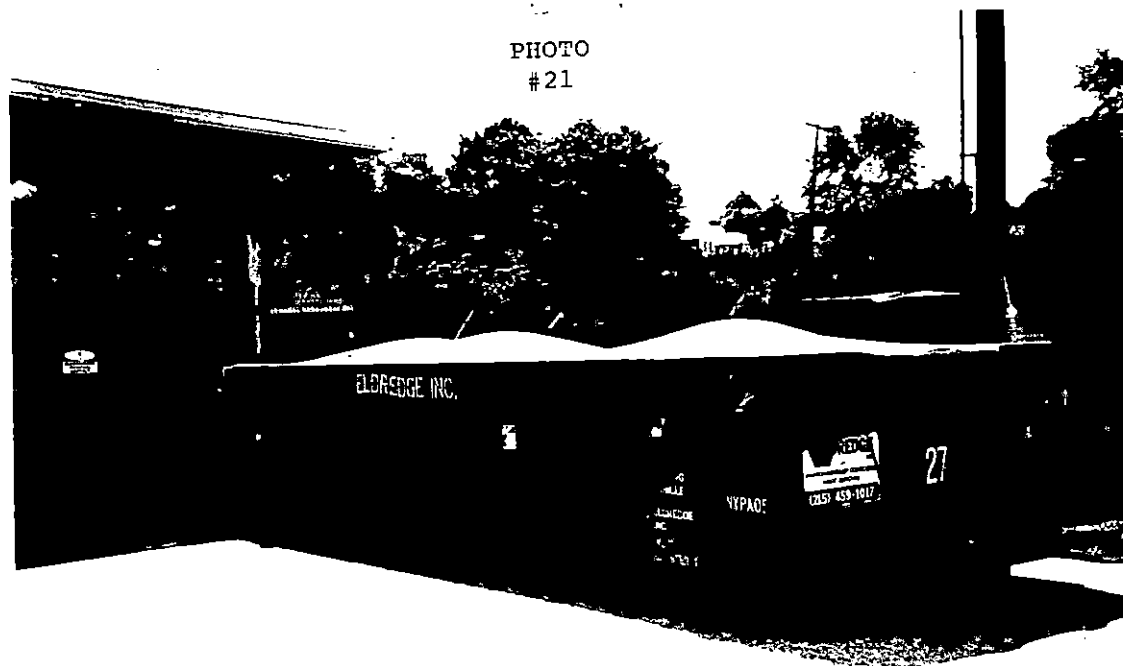


PHOTO #19 - SWMU #15

PHOTO #20 - SWMU #16

PHOTO #21 - SWMU #16

PHOTO
#21



exp 111 11111 11111
7/17/91

Polyester Resin Cooling Dock &
Refuse Dumpster

SWMU # 15

Alan Simpson

Dupont - Chestnut Run

7/17/91

Drums of non-regulated waste

SWMU # 16

Alan Simpson

Dupont - Chestnut Run
7/17/91

SWMU # 16

Alan Simpson

7

#22



PHOTO
#23



PHOTO
#24

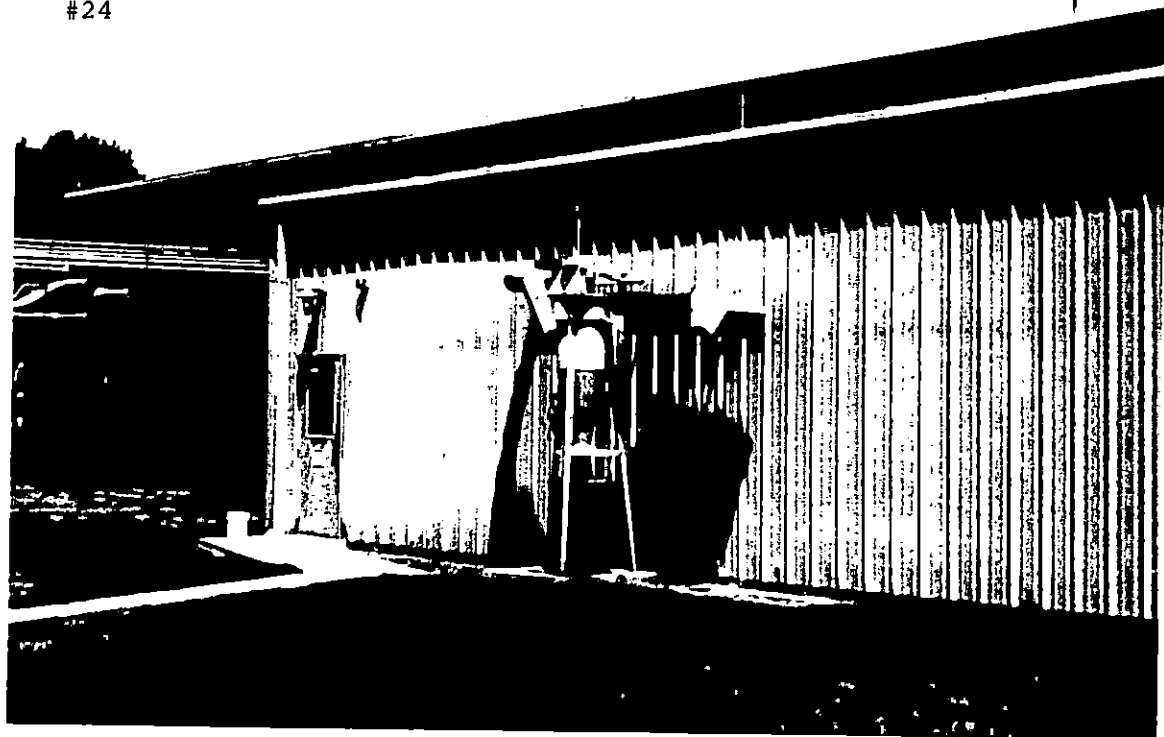


PHOTO #22 - SWMU #17

PHOTO #23 - SWMU #18

PHOTO #24 - SWMU #18

Dupont - Chestnut Run

7/10/91

Cyclone saw dust collector
Building 717 (north site)

SWMU # 18

Alan Simpson

Dupont - Chestnut Run

7/17/91

Satellite Accumulation area (Building 717)

SWMU # 17

Alan Simpson

Dupont Chestnut Run

7/17/91

Saw dust collection unit -
Building 713

SWMU # 18

Alan Simpson

PHOTO
#25



PHOTO
#26



PHOTO
#27

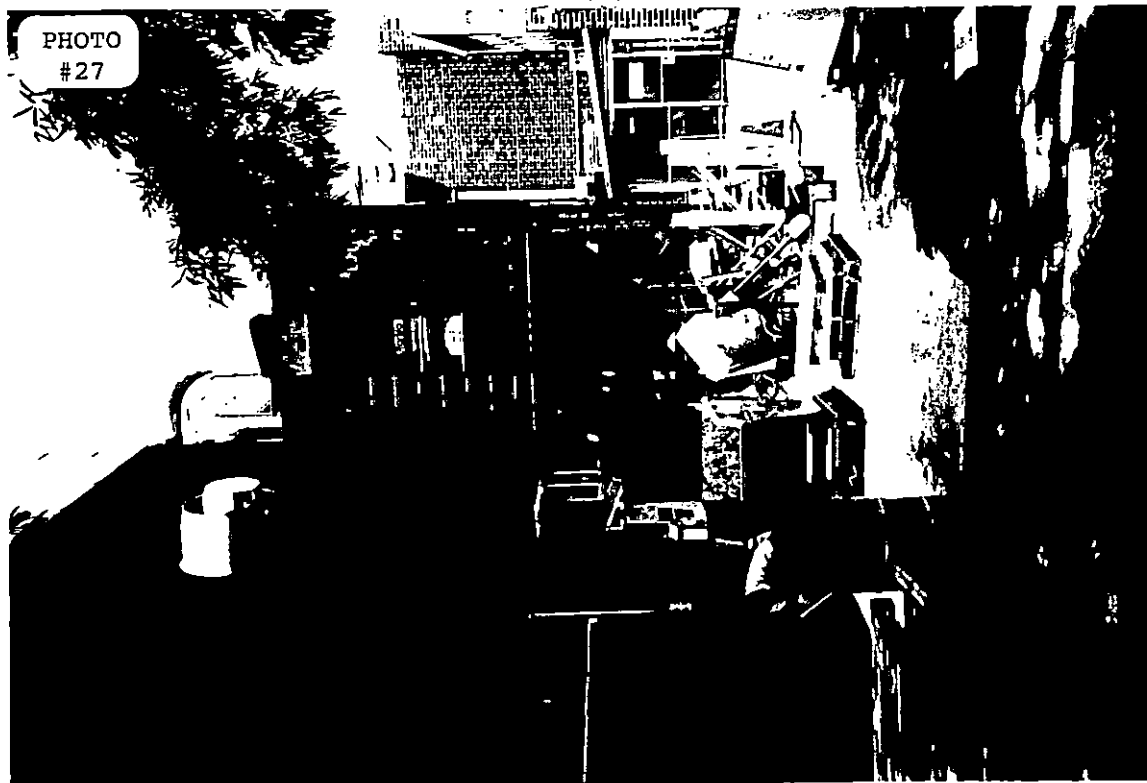


PHOTO #25 - SWMU #18

PHOTO #26 - SWMU #18

PHOTO #27 - SWMU #20

Dupont - Chestnut Run

7/17/91

Cyclone saw dust collector

Building 711

Swmu #18

Alan Simpson

Dupont - Chestnut Run

7/17/91

Saw dust Collection system,

outside Building 717

(south side)

Swmu #18

Alan Simpson

Dupont Chestnut Run

7/17/91

Carbon Black Dust

Collection Unit - outside

Building 711

Swmu #20

Alan Simpson

PHOTO
#28

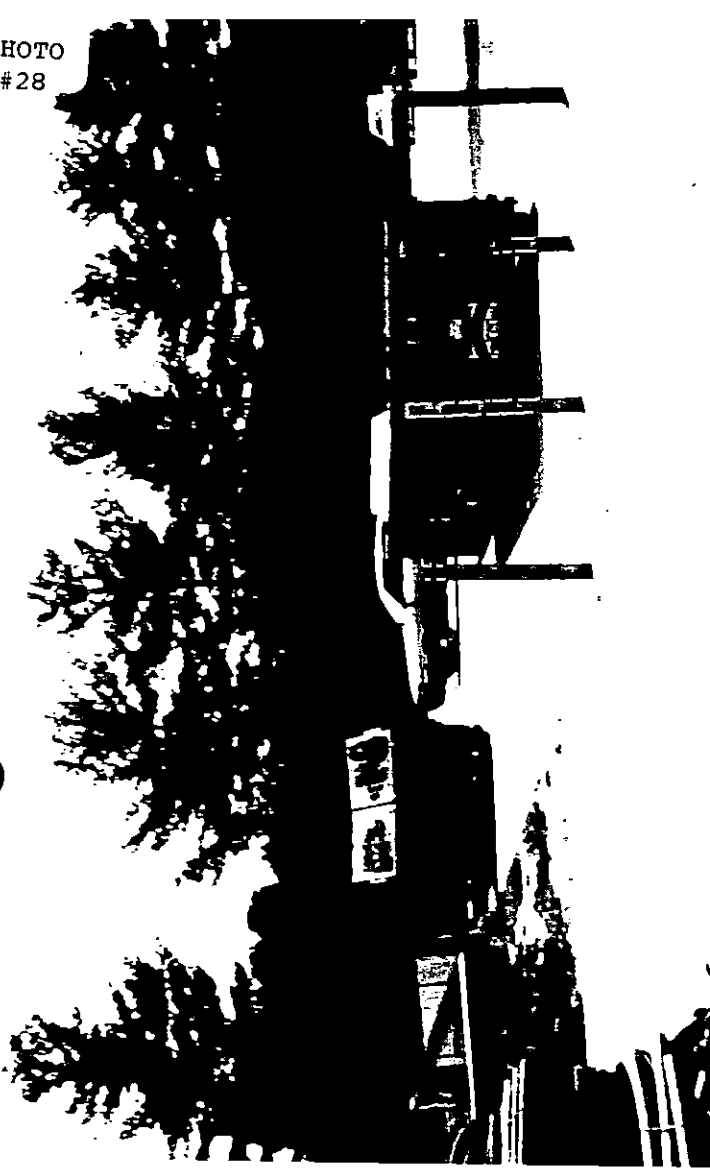


PHOTO
#29



PHOTO
#30



PHOTO #28 - SWMU #21
& 25

PHOTO #29 - SWMU #21

PHOTO #30 - SWMU #22

Dupont - Chestnut Run

7/17/91

Process Polymer Waste Dumpsters
(on the left - green dumpsters)
SWMU # 21

Refuse Dumpster (on the right -
orange colored)

SWMU # 25

Alan Simpson

Dupont - Chestnut Run

7/17/91

Dumpster outside Building 711 -
intended use is for the collection
of process polymer waste. Contained
solid waste (refuge and some sort of
dried foam).

intended use → SWMU # 21

Alan Simpson

Dupont Chestnut Run
7/17/91

Scrap Metal Yard (Inside Fenced area)
SWMU # 22

Alan Simpson

PHOTO
#31

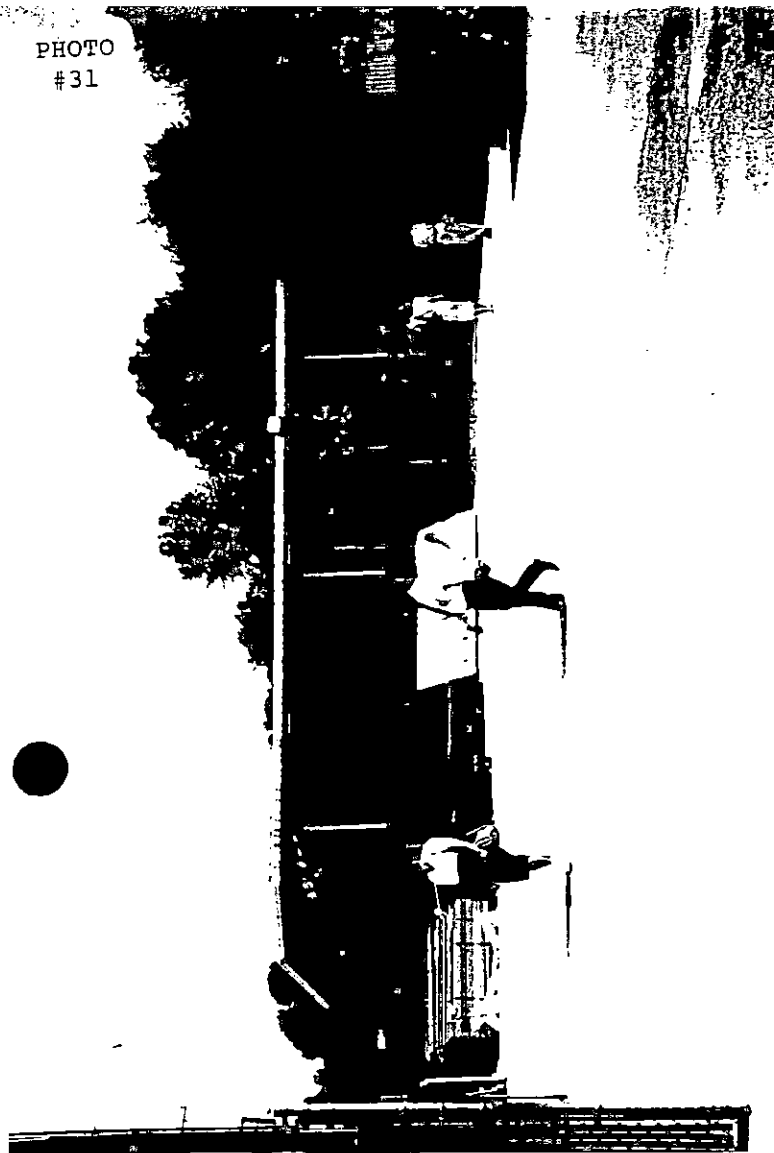


PHOTO
#32



PHOTO
#33



PHOTO #31 - SWMU #22

PHOTO #32 - SWMU #23
& 24

PHOTO #33 - SWMU #25

DuPont - Chestnut Run
7/17/91

Inside Sumu # 22
(north side)

Alan Simpson

DuPont - Chestnut Run
7/17/91

Dumpster on left - Sumu # 23

Dumpster on right - Sumu # 24

Both Sumu # 23 + # 24
are located within Sumu # 22

Alan Simpson

DuPont - Chestnut Run
7/17/91

Refuse Dumpster outside Building 217

Sumu # 25

Alan Simpson

PHOTO
#34

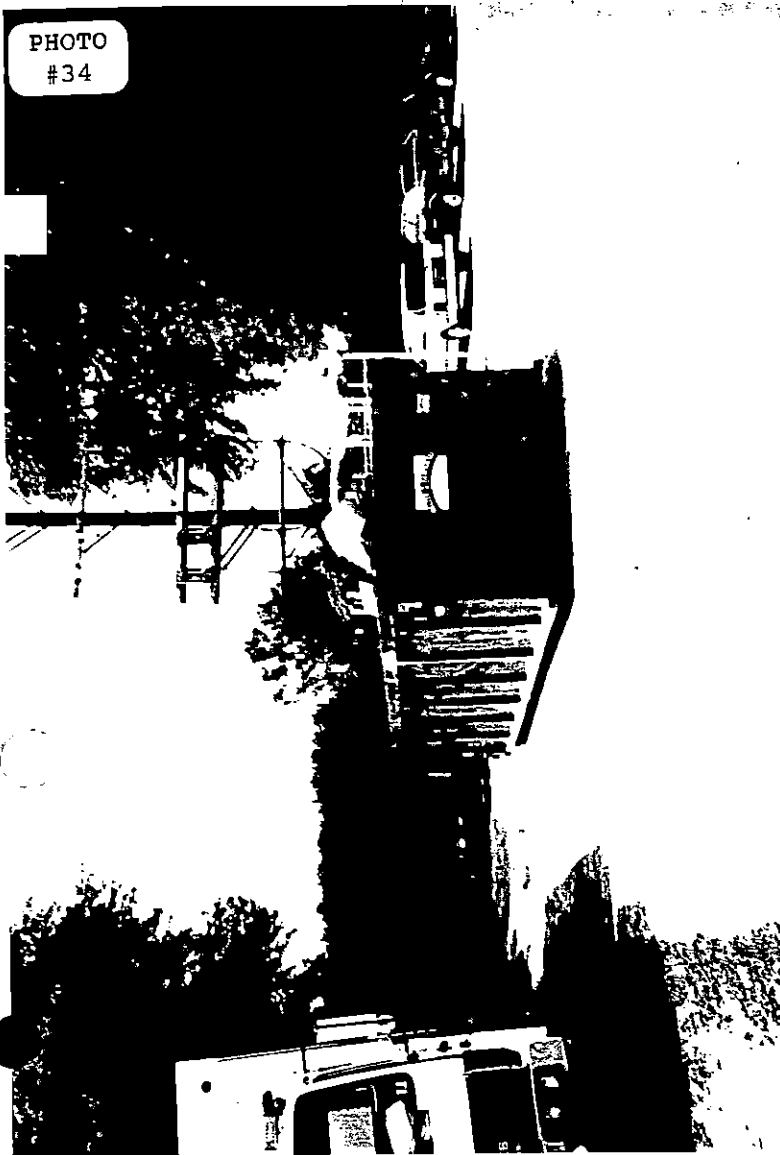


PHOTO
#35

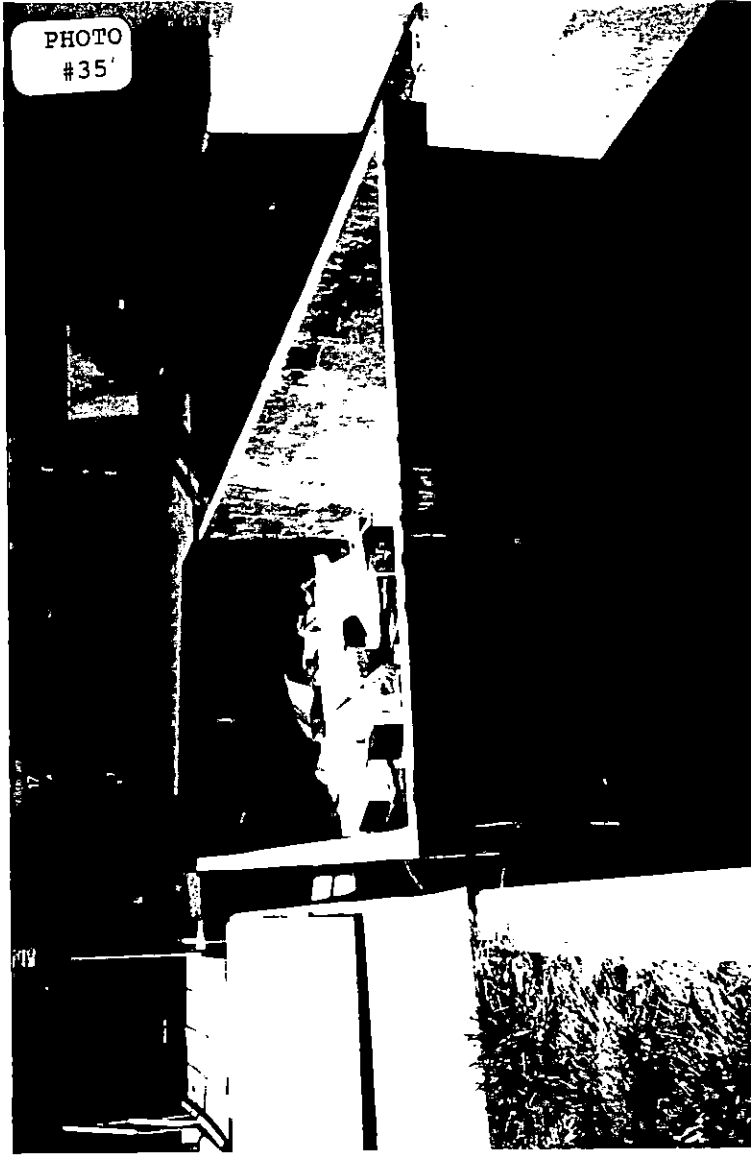


PHOTO
#36



PHOTO #34 - SWMU #25

PHOTO #35 - SWMU #25

PHOTO #36 - SWMU #26

Dupont - Chestnut Run
7/17/91

(Behind Building) A typical Refuse Dumpster - one of 41
(718) (Sumu # 25)

Alan Simpson

Dupont - Chestnut Run
7/17/91

Refuse Dumpster outside of Building 717
Sumu # 25
Alan Simpson

Dupont - Chestnut Run
7/17/91

One of 13 white Paper Dumpsters
for recycling (Sumu # 26)

Alan Simpson

PHOTO
#37

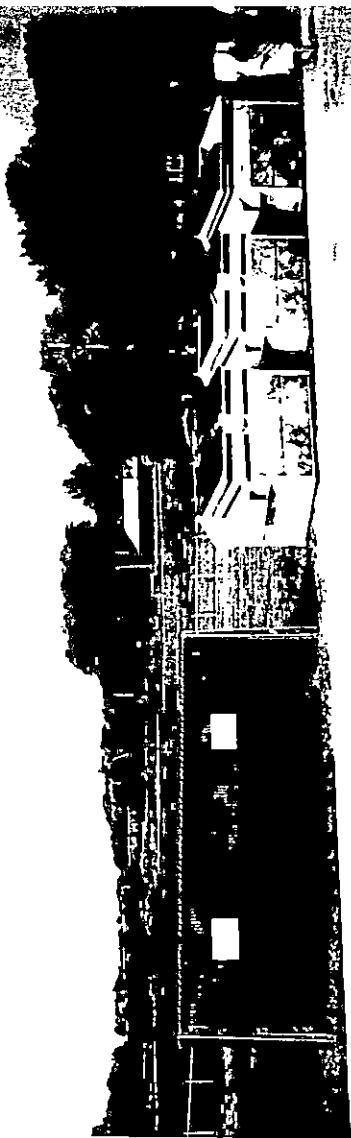


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#38

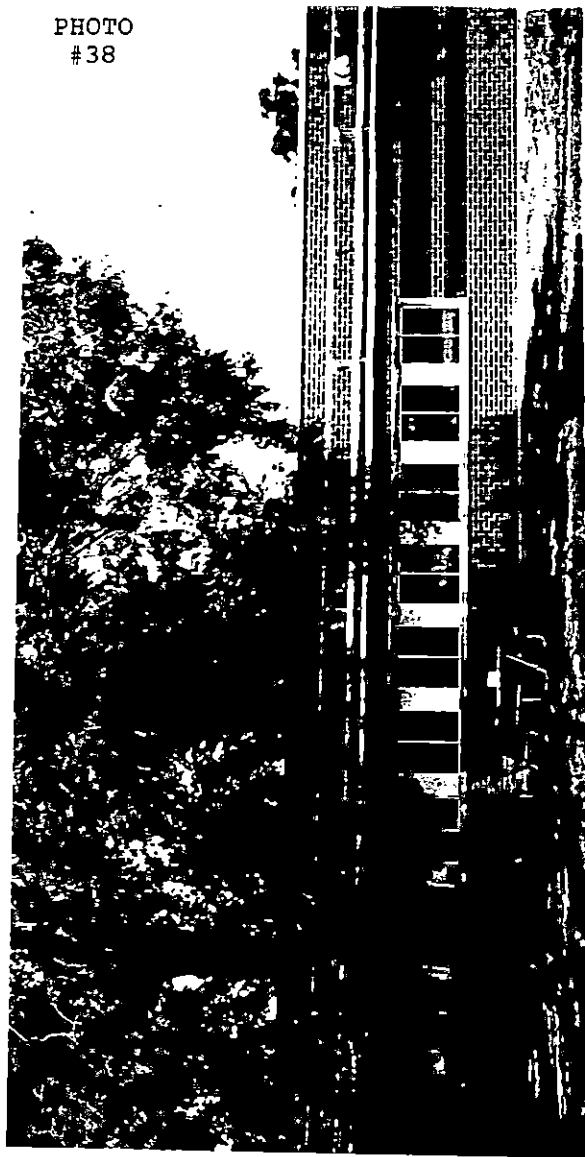


PHOTO
#39

PHOTO #37 - SWMU #27

PHOTO #38 - AOC #3

PHOTO #39 - AOC #3



7/17/91

Aluminum Can/Plastic Bottle Recycling Bins

Sum # 27

Alan Simpson

DuPont Chestnut Run
7/17/91

East Side of Building 713
The location of two underground storage
tanks - abandoned in place

AOC # 3

Alan Simpson

DuPont Chestnut Run
7/17/91

Area where abandoned ^{underground} storage tank
is located. (Building 712)

AOC # 3

Alan Simpson